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ABSTRACT

A project completed and field tested the concept of vocational instructors and special educators jointly planning curriculum objectives for the handicapped/special needs learner. The diagnostic-prescriptive individualized education (IEP) model developed at Bloomsburg University (Pennsylvania) or IEP Planner was used. Eight occupational areas were developed to supplement the four areas already completed. For each of these occupational areas, occupational safety, mathematical, and vocabulary skills appropriate for job entry levels for handicapped learners were identified. Following the 11-page narrative is the manual, "A Vocational/Special Education Individualized Transitional Planner (School to Work)." Planners are included for these vocational areas: horticulture, apparel assembly, carpentry, food service, plumbing, masonry, sales, cosmetology, electrical, welding, graphic arts, and machine. A completed planner is intended for use as an addendum to an IEP. Each planner provides the following: individual transitional preparation form (present aptitude level, physical assessment, career goal, job selection, attitude assessment); a vocational curriculum assessment inventory of specific occupational, safety, mathematics, and vocabulary skills to indicate attainment of objectives in the categories of objective, exposure, training, production, and employable; and a curriculum planning form. (YLB)

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FINAL REPORT

Development of a Competency-Based Vocational Education IEP Model

#86-6015

BLOOMSBURG UNIVERSITY

Bloomsburg, PA

June 1986

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Vocational Program Support Services for assistance, direction and guidance.

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I. Introductory Section

A. Abstract

#86-6015: Development of a Competency-Based Vocational Education IEP Model

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$18,900 - Federal

7/1/85 to 6/30/86

The purpose of this project was to complete and field test the concept of vocational instructors and special educators jointly planning curriculum objectives for the handicapped/special needs learner.

Objectives:

1) To field test competency-based vocational education IEP models for the purpose of systematizing a procedure which provides educational input and curriculum direction for vocational instructors.
2) To directly assist vocational instructors in the development, implementation and evaluation of a vocational IEP model.
3) To provide competency-based vocational IEP models in four more shop areas.

Outcomes:

1) The IEP Planner was pilot tested in Luzerne and Lackawanna counties.
2) The Hazleton Area School District conducted a mini field testing of the IEP Planner.
3) Developed models in eight additional shop areas.

Audience: All school districts in the Commonwealth of PA.

Published Materials: Final Report - I.T. Manual

B. Background

"There are no magical answers for guaranteed success in teaching vocational skills to disadvantaged students" (Baca, 1981, p. 3). But much of what will happen between a handicapped student and a vocational instructor depends on the attitude of the instructor. Minner (1982, p. 4) states that results indicate that the educational labels LD and EMR significantly influence the attitudes of vocational teachers. These labels send a message of undesirable characteristics.

There exists an abundance of research which supports the position that the perceived value of the student displayed by a teacher has a dramatic impact on the performance of the student.

The degree to which instructors are willing to adjust curriculum and instruction depends on how their attitudes can be challenged or questioned through knowledge of the disability. Programs can be developed but the critical issue is still the acceptance of the student by the vocational instructor. While behavioral descriptors cannot be eliminated from our educational system, new meaning can be brought to terms where lack of knowledge has created a negative attitude.

According to Minner (1984), the American Vocational Association recognized the need to continue to serve and educate handicapped individuals. A.V.A., in the reauthorization of the Vocational Education Act, has encouraged the continued funding of training of special needs groups. The task is not complete; the need still exists. Therefore, assistance to vocational instructors needs to be given in order to increase the productivity of handicapped individuals in the work force.

With the passage of Public Law 94-142, handicapped students throughout the nation have gained in stature and

have received the educational attention necessary to become a productive life-long member of society. This act assumed a new role for the "regular classroom" teacher. It required that the teacher act in concert with support services and retrofit knowledge to that of a diagnostician and educational strategist. Probably the most important aspect of change in this new role was one of attitude. Hence "regular classroom" teachers were provided with diagnostic-prescriptive teaching models.

While much has been written regarding the role and function of the vocational educator and handicapped student, little research is available on the development of a vocational educator as a diagnostic-prescriptive teacher; one that can, in fact, develop and implement a vocational IEP. From past projects which have been conducted by Bloomsburg University with vocational instructors regarding the education of handicapped students, the needed and critical change did not occur, nor was there an attitudinal change. Realistically, vocational educators did not have control, understanding or transfer of knowledge to work directly with handicapped students. The effect of Act 94-142 on vocational educators might be stated as educationally disabling. Bloomsburg University has developed a diagnostic-prescriptive IEP model which brings together vocational educators and special educators to cooperatively develop curriculum for handicapped learners. It causes the transfer of knowledge and the sharing of attitudes in the development of realistic work oriented curriculum for handicapped learners.

Basically, the IEP Planner provides for the assessing of handicapped learners assigned to an instructor's shop and the assessing of curriculum in terms of establishing an individualized competency-based program. In essence, it would provide a mechanism for the shop and special education

instructor to establish, implement and evaluate achievable job objectives for handicapped learners.

The model which has been developed will provide a flexible delivery system for the development of curriculum for handicapped learners. Bloomsburg University also provided a resource person to work with teachers when implementing the IEP Planner. The main trust of the BU resource (field) person for the fiscal year of 1985-86 was to continue to develop a competency-based vocational IEP model to be used in curriculum assessment and goal accomplishment for handicapped learners. While developing the model in eight additional shop areas the BU resource person directly worked with the shop instructor to establish and implement realistic career goals for handicapped learners. Through this direct contact in the shop with the instructor, chances are increased that vocational instructors will become diagnosticians and educational strategists, hopefully creating a positive change in the vocational instructor's attitude.

II. Method

The first step in meeting the project objective was to select shop instructors who were willing to identify occupational safety, mathematical and vocabulary skills - skills that would be appropriate for job entry levels for handicapped learners. Previously the IEP Planner had completed skills for the following occupational areas: Apparel Assembly, Food Service, Carpentry and Horticulture. After intensive collaboration with shop instructors, eight more areas were developed during this project year of 1985-86. The eight completed areas are: Masonry, Sales, Cosmetology, Electrical, Welding, Graphic Arts, Machine and Plumbing. Pages 6, 7 and 8 display the instrument and results. In addition, the IEP Planner was pilot tested in both Luzerne and Lackawanna counties using a delphi probe. Also, selected special education teachers in the Hazleton School District acted as a field site for the implementing of the IEP model.

BLOOMSBURG UNIVERSITY
Bloomsburg Pennsylvania

N = 20

VOCATIONAL/SPECIAL EDUCATION
IEP PLANNER PROBE

Jan. 1986

Areas of Possible Change	Suggested Improvement	How will the change improve the planner?
1. Shop areas represented in the planner (four)	Need more vocational areas. Should increase to a total of 12 vocational areas for most effective use of the planner.	Would provide for a more comprehensive planner.
2. Level of development (Helper level in vocational shop)	Appropriate	No needed change
3. Skills represented in the vocational trade areas	Appropriate	No needed change
4. Skills represented in the vocabulary areas	When using the planner, the vocational instructor should provide a vocabulary definition reference list for the special education teacher.	Would reduce time spent by the special educator in identifying the definitions.

Areas of Possible Change	Suggested Improvement	How will the change improve the planner?
5. Skills represented in the mathematics area	Appropriate	No needed change
6. Skills represented in the safety area	Appropriate	No needed change
7. Curriculum Planning Form	Eliminate last box which asks for "Needed Ability Level." Otherwise, planning form is appropriate.	Specifies only relevant and necessary knowledge to implement curriculum.
8. IEP Form (if possible, suggest optional title)	Eliminate IEP Form and substitute Individualized Transitional Preparation Form.	Planner will act as a transitional curriculum planner in preparing the handicapped learner to move from school to work.

Areas of Possible Change	Suggested Improvement	How will the change improve the planner?
9. Provision for special educators and vocational educators to plan curriculum	Develop a list of suggested strategies for bringing together the special educator and the vocational instructor to plan a work transitional curriculum for the handicapped learner.	Stimulates ways in which the planner can be most effectively implemented.
10. Adaptation to existing curriculum in schools	Very workable concept. It is a much needed device in curriculum. Can easily be adapted to existing curriculum.	No needed change
11. Other Areas - Reorganize planner into the following sequence: Individualized Transitional Preparation Form, Vocational Skills, Safety Skills, Mathematics Skills, Vocabulary Skills, and the Curriculum Planning Form. Develop a manual that would be a preface to the planner.		

Form adapted from: PDE-3347 (10/85)

The planning probe was developed by faculty within the Department of Communication Disorders & Special Education. Component parts of the Planner were identified and listed on a form with an opportunity for participants to suggest improvement and state how the changes would improve the Planner. Selected vocational personnel and special educators from the Intermediate Units in Luzerne and Lackawanna Counties were contacted to individually review the Planner and complete the probe (N = 20). A follow-up interview session was held with the participants discussing in detail their responses. Special emphasis was given to the necessary changes needed to produce a product that would be effective and diagnostically usable.

Field Testing

The Hazleton Area School District provided the special education teachers needed to field test the IEP Planner. Five special education teachers took part in the field testing (one elementary, two junior high schools, two senior high schools). The Planner was used by these individuals during the months of April and May 1986. They used the Planner to develop curriculum plans with the vocational instructor for handicapped learners that would be selecting vocational programs for the academic year of 1986-87. The field testing was coordinated by Mr. John Rossi, School Psychologist; Mr. James Mulligan, Supervisor of Special Education; and Mr. Manfred Marotta, Coordinator of Industrial Arts/Vocational Education.

III. Analysis

The field testing was analyzed through interviews with the five participating special education instructors. The interview results support very strongly the findings of the "planning probe." All but one suggestion for change has been implemented in the latest edition. The following represent a list of the suggested changes:

1. Change the thrust and name of the Planner from a "Vocational/Special Education IEP Planner" to a Vocational/Special Education Individualized Transitional Planner.
2. Eliminate the IEP Form and substitute an Individualized Transitional Preparation Form.
3. Eight more occupational areas were needed to have a complete planner.
4. Eliminate "Need Abilities Level" on curriculum planning form.
5. Provide a definition reference list for the vocabulary skills.

All changes except item five are reflected in the revised Planner. The vocabulary definition list would need to be a special addendum to the Planner. There was an overwhelming feeling by the participants that the Planner was an extremely valuable tool for planning occupational curriculum geared for job entry levels for handicapped learners. Requests continue to be received by the Department of Communication Disorders & Special Education for the Planner.

IV. Conclusion and Recommendations

Dissemination of the Planner has been at local, state and national levels. Presently, 100 Planners have been distributed by Bloomsburg University to individuals asking for assistance in planning occupational curriculum experiences for handicapped learners. Requests have been received from public school teachers and administrators, higher education faculty, state departments of education and private institutions. To date no negative feedback has been received.

The research conducted this year has proved most meaningful and productive for creating an effective curriculum model. However, the overarching finding was the Planner was extremely

useful and provided needed guidance for both the special educator and vocational instructor to develop occupational curriculum for handicapped learners. It is hoped that the I.T. Planner could be field tested and formally researched to determine effectiveness in its completed form.

V. Dissemination

It will be continued to be disseminated at local, state and national levels. Personnel from the project will be available for advisement if so requested.

VI. Supplemental Materials

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Sponsor: Pennsylvania Department of Education
Bureau of Vocational Education

Developed by: Mr. Joseph Youshock
Dr. Nancy Gilgannon

Title: A Vocational/Special Education Individualized Transitional Planner (School to Work)

Submitted to: Dr. Andrew Karpinski
Department of Communication
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Bloomsburg, PA 17815

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MANUAL

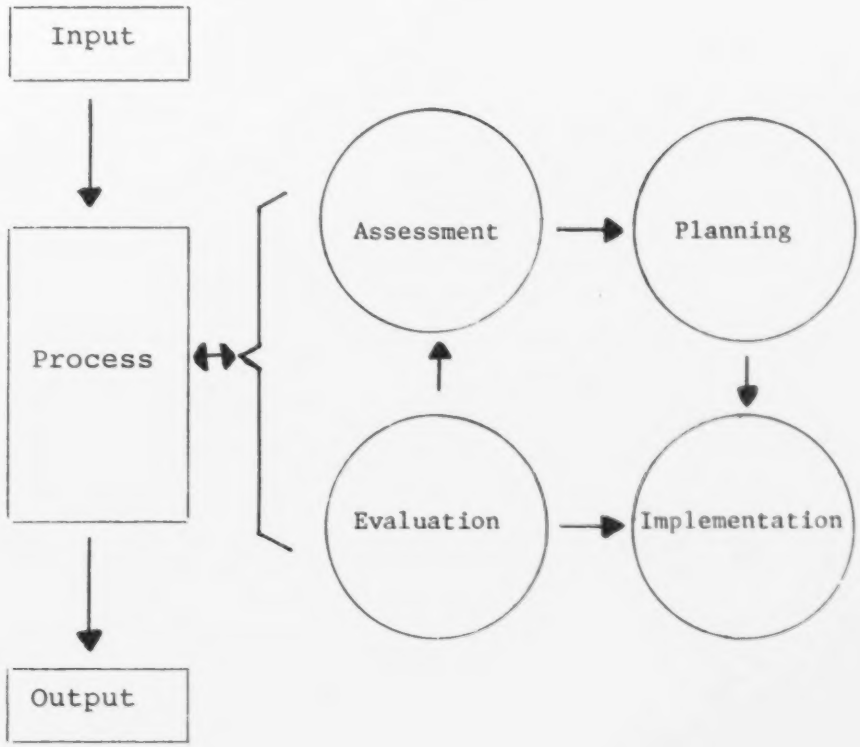
The eventual goal all handicapped students hope to achieve is successful job employment. It is the role of the school to initiate programs and develop plans that will achieve this purpose. For the past two years, Bloomsburg University, Department of Communication Disorders & Special Education has been involved in a project to develop more realistic curriculum planning for handicapped students. A product of this project was an IEP Planner that could be used by both the special educators and the vocational educators in developing a curriculum plan for the handicapped/special needs learner.

During the fiscal year of 1985-86, this Planner was expanded and pilot tested in several counties in Pennsylvania. A major finding was that the Planner could serve as a critical model in planning the transition from school to work. The displayed model describes the process that impacts students as they prepare to bridge the gap from school to work.

The plan which Bloomsburg University has developed and implemented follows the transition-enhancing process. That is, the plan interfaces knowledge with performance skill and provides a process for immediate evaluation. The process brings special educators and vocational educators together to jointly develop a curriculum plan for the special needs learner based on career goals and job selection. It pairs basic skill development with occupational development. The format for this procedure is an I.T. planning booklet.

Typical Educational Processes

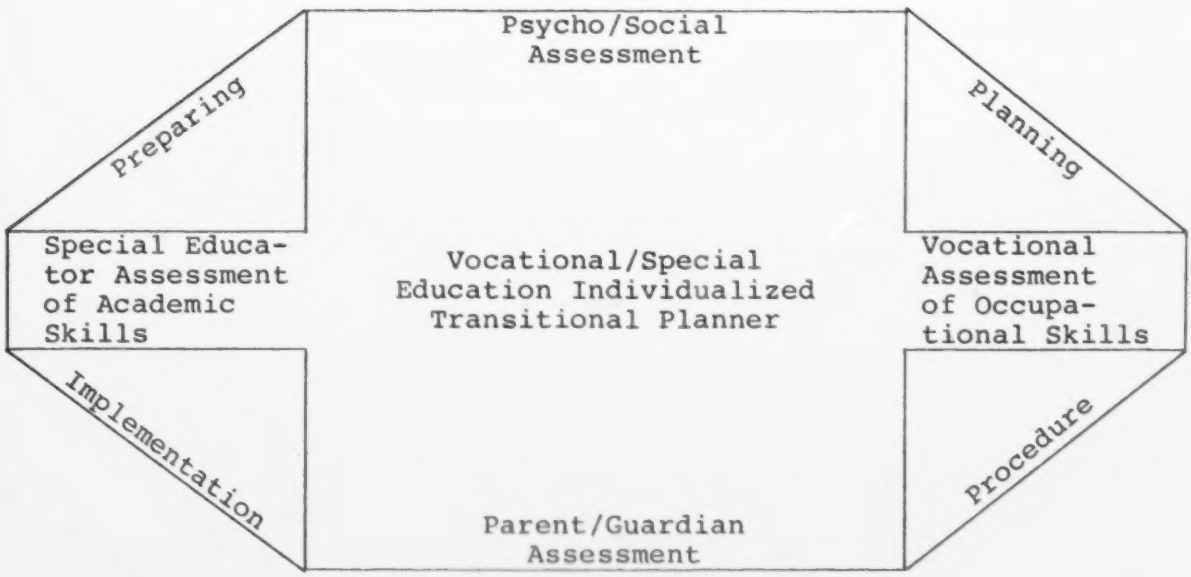
Transition-Enhancing Processes



The relationship of transition-enhancing processes to the overall educational process.

Brown, James & Kayser, Terrence. The Transition of Special Needs Learners into Postsecondary Vocational Education. Department of Vocational & Technical Education, University of Minnesota/Minnesota State Department of Education, 1982 (p. 76).

I.T. Planning Model



Preparing: The Planner is implemented once collected data from the psychologist, social worker, educators and parents is compatible with the career goal/job selection of the special needs students. Once the process of data collection/analysis has been accomplished, the Vocational/Special Education Individualized Transitional Planner becomes operational. The first step would be to complete the Individual Transitional Preparation Form.

Planning: The special educator would receive task analysis sheets in the academic areas of vocabulary and mathematics relevant to appropriate shop areas. Concurrently, the vocational educator would receive task analysis sheets in the shop and safety areas. Each would proceed to identify appropriate learning tasks based on data from the Individual Transitional Preparation Form. Once this was accomplished, the Curriculum Planning Form would be completed jointly by the vocational and special educators.

Implementation: Both the special educator and vocational instructor would begin to independently develop teaching strategies for exposing the special needs learner to tasks designed to achieve a job placement. As tasks are accomplished at an employment level they would be recorded by the instructor. If adjustments are necessary during the learning period, changes would be appropriately made and recorded in the Planner.

Procedure: The Planner creates an environment in which special educators and vocational instructors must work together to provide the most effective process of preparing handicapped and special needs learners for the world of work. By both educators signing the Curriculum Planning Form, the form becomes a learning achievement contract needed for job placement.

Communication Strategies for Special Educators and Vocational Instructors

1. Team Approach - Special educators and vocational instructors meet with appropriate pupil services personnel during the assessment phase. This would provide for the most effective communication process.

2. Counseling Approach - The counselor, acting as a mediator, could meet with the special educator and vocational instructor individually and have them complete the task analysis and curriculum forms.

3. Dual Approach - Release time would be given to both the special educator and vocational instructor to meet with each other to evaluate the data and jointly plan the curriculum and tasks for the special needs learner.

4. Individual Approach - The individual transitional preparation form would be completed by educator(s) in the district, and the form would be forwarded independently to both the special educator and vocational instructor. The data would be analyzed, task identified, and the curriculum planning form completed by each. This process would provide a minimum of communication and would weaken the planning and implementation process.

This Planner has been pilot tested, and suggested changes are reflected in this latest edition. The Vocational/Special

Education Individualized Transitional Planner is an attempt to develop a practical approach to the problem of bridging the gap from school to work.

In general, this model was developed to be used as an addendum to an IEP.

Definition of Terms:

Objective - Specific knowledge to be learned in order to perform occupational skills.

Exposure - Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training - Performs entire task with direct assistance. Prompting is needed.

Production - The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable - The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

Word Recognition - Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling - Ability to correctly spell a word.

Word Understanding - Ability to comprehend the meaning of a word.

Content Use of Word - Ability to use a word correctly in both verbal and written communication associated with a job task.

Frustration Level - Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level - Ability to perform objective under the guidance of the instructor (training level).

Independent Level - Can transfer knowledge to related situations with independence and proficiency (production level).

Vocational/Special Education

I.T.

Planner

Vocational Area: Horticulture

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Horticulture

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Planting Skills — Horticulture Skills	Objective	Exposure	Training	Production	Employable
Clean seed					
Plant seed					
Plant bulbs					
Plant shrubs					
Plant bare-root trees					
Plant ball & burlapped trees					
Plant containerized trees					

		Objective	Exposure	Training	Production	Employable
Planting Skills (cont'd)	Plant lawn and turf grasses					
	Remove cuttings from stock plants					
	Stick cuttings in rooting medium					
	Transplant seedlings to pots or flats					
	Apply rooting hormone powders					
	Label planted specimens					
Maintaining Plants	Sterilize soil					
	Cultivate planting beds					
	Fertilize crops					
	Fertilize potted plants					
	Prune plants					
	Water plants					
	Control placement of plants					
	Apply mulches					
	Remove diseased plants					
	Check plants for insects and diseases					
	Remove faded flowers from plants					
	Apply lime and fertilizer according to soil test					
	Haul and spread topsoil					
Operating Equipment	Operate power mower					
	Operate hand sprayer					
	Operate power sprayer					
	Mow and trim lawn					
	Apply fertilizer with centrifugal spreader					

		Objective	Exposure	Training	Production	Employable
Operating Equipment (cont'd)	Apply fertilizer with hopper spreader					
	Use soil probe or auger					
Maintaining Equipment	Clean and sharpen hand tools					
	Clean and sharpen garden tools					
	Replace handles on tools					
	Clean mower blades					
	Sharpen mower blades					
	Thoroughly clean spraying equipment					
	Service small gasoline engines					
	Paint lawn and garden furniture					
Organization/Leadership	Knows characteristics of a good leader					
	Knows origin and history of FFA					
	Knows purposes of FFA organization					
	Knows meaning of FFA colors and parts of emblem					
	Knows FFA motto and pledge					
	Reads FFA publications					
	Knows FFA offices and their duties					
	Knows how to use parliamentary procedure					

Vocational
Curriculum Assessment Inventory

Shop: Horticulture

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Horticulture Safety Skills	Objective	Exposure	Training	Production	Employable
General Rules	Wear appropriate shop clothing. Loose sleeves, aprons, neckties, and dangling clothing are dangerous					
	Do not disturb others while they are operating power equipment					
	Keep mind on work					
	Keep and use guards on all equipment					

		Objective	Exposure	Training	Production	Employable
General Rules (cont'd)	Keep shop clean and free of rubbish and surplus tools					
	Stop all power machines before making adjustments					
	- - -

	Objective	Exposure	Training	Production	Employable
Drill Press (cont'd)					
Avoid forcing the drill bit					
Keep the long end of the stock to your left when possible					
Support the ends of long stock with a stand					
Adjust the drill press to the proper speed for the material being drilled					
Do not attempt to stop a revolving piece of wood or metal in which the bit is caught					
Clean chips off work and table with a brush to avoid slivers in hands					
Withdraw bit frequently if it goes deeper than flutes, so flutes can be cleaned of shavings					
Reduce pressure when bit begins to break through bottom of work					
- - -

		Objective	Exposure	Training	Production	Employable
Circular Saw (cont'd)	Use saw guard on all work where possible					
	Be sure saw table is free of material and tools and that all adjustments are tightened before turning on power					
	Stand slightly to one side when operating saw, and be sure others are out of the way					
	Hold material against ripping fence when ripping, and against miter gauge when crosscutting					
	Do not use a dull blade or one with inadequate set. Such a blade is likely to cause a kickback					
Jig Saw	Make sure blade is properly chucked and is clear before turning on					
	Set blade to cut on down stroke					
	Set upper blade guide just above material being cut					
	Use speed and blade type corresponding to material being sawed					
	Feed material into blade slowly. Be especially careful when sawing small circles					
	Plan cuts to avoid "backouts" whenever possible					
	Never use a cracked or kinked saw blade					
	Test blade for tension before starting saw					

		Objective	Exposure	Training	Production	Employable
Electric Welding	Use welding helmet when welding and clear goggles when chipping					
	Wear heavy leather gloves and apron					
	Wear trousers without cuffs, but long enough to prevent metal from falling into operator's shoes					
	Make sure electrode holder and all electrical connections are properly insulated					
	Do not use welder in damp location					
	Never strike an arc until you are sure everyone nearby is protected from the arc rays					
	Prevent cables from coming in contact with hot metal or sharp objects					
	If electrode becomes stuck to work, shut off power and remove with pliers					
	- - -

		Objective	Exposure	Training	Production	Employable
Oxy-Acetylene Welder (cont'd)	NEVER use more than 15# pressure on acetylene line					
	Keep face a reasonable distance away from work					
	Never allow end of tip to get into molten puddle					
	Close acetylene valve first when shutting down torch					
	Never weld or cut metal where sparks will drop onto concrete					
	ALWAYS use regular friction lighter to light torch					
	Keep hot metal and flame away from hose					
	Keep tip pointed away from everyone to prevent saturating clothes with gas before lighting torch					
	Keep acetylene or propane cylinder in an upright position when welding to prevent liquid in tank from being forced out the hose					
	When welding or cutting galvanized iron, avoid breathing fumes. Use forced ventilation or do the job out of doors					
	Close tank valves tightly when welding is completed and bleed out hoses					
	- - -

		Objective	Exposure	Training	Production	Employable
Jointer (cont'd)	Do not attempt to surface stock that is less than 10" in length					
	Stand to the left of the jointer, never directly in back of it					
	Do not attempt to take too heavy a cut					
	See that the "clamping screws" on the fence are screwed down securely, so that the fence cannot slip while in use					
	Do not let your fingers extend over either end of a board being planed					
	Do not attempt to plane stock material that cannot be held securely against the fence					
	Change position of the hands so they will never be directly over the jointer when passing work over the jointer					
	Do not joint end grain, feed stock with the grain					
	See that the material run over the jointer is sound and free of knots and splits					
	- - -

		Objective	Exposure	Training	Production	Employable
Band Saw (cont'd)	Always keep hands away from blade while it is in operation					
	Plan work, if possible, so that it will not be necessary to back the saw out of the cut					
	Keep upper guide set down close to the work, particularly when sawing thick material					
	In sawing irregular work, saw as near the line as possible the first time through. If necessary, make a second cut to finish certain parts					
	Tilt table to cut bevels					
	In cutting several pieces to the same length, the ripping fence may be used as a gauge					
	If blade tends to lead off to one side, it may be dull or unevenly set, or the guides may be improperly set					
	- - -

		Objective	Exposure	Training	Production	Employable
Wood Lathe (cont'd)	Operate lathe at slow speed until stock is cylindrical; regulate speed according to size and length of stock					
	Clamp tailstock firmly in place, and lock tailstock spindle before starting lathe					
	Keep tools sharp; place tools in rack when finished to keep sharp					
Sander (Belt and Disc)	Be careful to keep fingers away from sanding surface					
	Do not apply too much pressure to object you are sanding					
	Do not keep object you are sanding at the same position on the belt or disc for too long a time					
	Sand with rotation of wheel or belt					
Portable Electric Tools	Because of danger of shock, portable tools should always be grounded while in use					
	Always remove plug from outlet before changing blades, belts, etc., or before lubricating or inspecting					
	Never carry or drag tools around by the cord					
	Keep cord free from grease and oil					
	Small pieces of wood or metal which are to be worked on should be placed in a vise or fastened securely to the bench					

		Objective	Exposure	Training	Production	Employable
Portable Electric Tools (cont'd)	Be sure switch is off before inserting plug in outlet					
	Make sure all nails or other pieces of metal are removed before starting to work on wood with portable tools					
	Make sure electric cord is out of the way before starting tool					
Soldering	Do not overheat soldering copper					
	Never lay a hot soldering copper on a regular bench top					
	When using an open flame, make sure it is pointed in the proper direction					
Painting	Keep paints tightly covered when not in use					
	Keep brushes clean and store them properly					
	Protect nearby objects and persons when painting					
	Make sure all cans of turpentine, gasoline, kerosene, etc., are covered (capped) when not being used					
Misc.	Do not use a dull tool; sharpen it					
	Use proper tool for the job, especially hand tools					

		Objective	Exposure	Training	Production	Employable
Misc. (cont'd)	Always shut off power tools before leaving them					
	Do not use mushroomed tools or tools with loose handles					
	Do not use tools that are not properly fitted					

Special Education
Curriculum Assessment Inventory

Shop: Horticulture

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Horticulture Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Linear Measurements				
Read inch ruler to nearest sixteenth				
Read measuring tape for feet				
Read feeler gauge to nearest thousandth				
Read spark plug gauge - .025, .035, etc.				
Read micrometer to nearest thousandth				
Read pounds per square inch gauge				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Volume/Area	Be able to calculate square inches, square feet, square yards, acres				
	Be able to measure teaspoons, tablespoons, cups, pints, quarts, gallons, cubic feet, cubic yards				
Standards	Determine 4 inch, 6 inch, 8 inch, 10 inch planting pots				
	Determine standard pot, azalea pot, bulb pan				
	Determine nail sizes by penny weight				
	Determine wood screw sizes by gauge				
Computations	Be able to add, subtract, multiply, divide - fractions, percentages				
	Convert fractions by 1/8ths to decimals and vice versa				
	Convert fahrenheit to centigrade				
	Convert pH scale to degree of acidity or alkalinity				

Special Education
Curriculum Assessment Inventory

Shop: Horticulture

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Horticulture Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Soil				
Peat				
Mulch				
Perlite				
Organic				
Inorganic				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Rooting Medium				
Annual				
Biennial				
Perennial				
Dormant				
Stock Plant				
Transplant				
Seedling				
Bulb				
Corm				
Cutting				
Ground Cover				
Green Manure				
Deciduous Trees				
Evergreen Trees				
Coniferous Trees				
Chlorophyll				
Nutrients				
Photosynthesis				
Transpiration				
Graft				
Crop Rotation				
Pruning				
Harden Off				
Pinching				
Shrub				
Toxic				
Ball & Burlap				
Girdling				
Hardpan				
Leached				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Succulent				
Bare Root				
Complete Fertilizer				
Erosion				
Heading Back				
Loam				
Ph				
Sodding				
Thatch				
Topiary				
Weed				
Windburn				
Cold Frame				
Drip Line				
Flat				
Humidity				
Irrigation				
Node				
Tuber				
Vermiculite				
Bulb Planter				
Aerator				
Dethatcher				
Duster				
Loppers				
Cutter Mattock				
Rotary Mower				
Reel Mower				
Spade				
Trowel, Planting				
Cultivator, Hand				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Apparel Assembly

Individual Transitional Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level

Entrance Reading level needed _____ grade level

Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		
11. _____		

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Apparel Assembly

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Apparel Assembly Skills	Objective	Exposure	Training	Production	Employable
Identify basic machine parts (manufacturer's manual)					
Operate machine for control (unthreaded)					
Thread upper machine					
Thread bobbin or underthreading					
Operate threaded machine to develop control					

	Objective	Exposure	Training	Production	Employable
Start machine					
Stop machine					
Pivot and turn					
Stitch wavy lines					
Stitch circles					
Stitch various seams (listed in text or manual)					
Stitch darts					
Back tack or reverse stitching					
Change needle in machine					
Test machine					
Check for quality stitch					
Identify S.P.I. (stitches per inch					
Change feet					
Operate machine with gauges					
Operate machine with attachments					
Identify with measuring devices fractions to 1/8"					
Sew basic hand stitches (listed in text or manual)					
Identify notches on garment					
Mark and chalk pattern pieces					
Assist in cutting					
Assist in garment construction					
Assist in hand finishing					
Assist in under pressing					
Incorporate pressing safety procedures					
Assist in trimming and cleaning garment					
Select threads to match jobs					

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	Objective	Exposure	Training	Production	Employable
Organize stock and material in shop					
Fill bobbins to match jobs					
Maintain cleanliness in work area					

Vocational
Curriculum Assessment Inventory

Shop: Apparel Assembly

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Apparel Assembly Safety Skills	Objective	Exposure	Training	Production	Employable
Do not put pins or needles in your mouth					
Do not put open scissors or other sharp objects on machine					
Always concentrate on your own work; don't let your mind wander while operating machine					

	Objective	Exposure	Training	Production	Employable
Report any accident and treat any injury immediately, no matter how minor					
Keep equipment in proper working condition. Immediately report any broken equipment. Do not attempt to make any adjustments or repairs about which you are not absolutely sure					
Replace burned out light bulbs promptly					
Turn off motor when machine is not in use					
Learn the location of switches, plug-ins, and fuses					
In case of an emergency, learn how to turn off main switch					
Hold the plug, not the cord, when disconnecting electric cords					
Use extreme care. Carelessness causes accidents. Be sure before you proceed; if in doubt, don't. Caution is still the best safety device known					
Practice good posture					
Keep hands on lap					
Do not start or stop machine by turning the balance wheel with hands					
Lower presser foot and needle and turn off motor when machine is not in use					
Keep hands away from needle					
Do not pull material through machine					
Control speed of the machine; stitch slowly					

	Objective	Exposure	Training	Production	Employable
Do not use the hand as a brake to stop the machine					
If it is necessary to turn balance wheel by hand, do so only after machine has stopped completely					
Never keep presser foot down when operating machine without fabric					
Be sure to raise presser foot if filling bobbin when not stitching					
Remove all thread ends from bobbin before refilling					
Use both hands to raise head of machine					
Keep both feet off treadle					
Do not place bobbin case in machine when needle is down					
Close bed plate before operating machine					
Keep feet off treadle when replacing needle					
Make only those adjustments you have been trained to do					
Report trouble to the proper person					
Turn off motor when cleaning machine					
Never oil machine manually while it is in operation					
Use both hands to raise and lower head of machine					
Be careful not to spill oil on floor					

	Objective	Exposure	Training	Production	Employable
If some does spill, clean it immediately					
Do not oil or grease motor					

Special Education
Curriculum Assessment Inventory

Shop: Apparel Assembly

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Apparel Assembly Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Measuring Devices to the 1/8"				
6" rule or seam gauge rule				
12" rule				
Yard stick				
72" rule				
60" flexible tape measure				
Set seam gauges using 6" rule to 1/8"				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Yardage	Inches to the yard				
	Feet to the yard				
	Inches in 1/4 yard				
	Inches in 1/2 yard				
	Inches in 3/4 yard				
Metric System	mm in a cm				
	cm in a metre				

Special Education
Curriculum Assessment Inventory

Shop: Horticulture

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Apparel Assembly Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Alteration				
Apparel				
Attire				
Basting				
Binding				
Bobbin				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Bodice				
Buttonhole				
Cotton				
Darts				
Dry Goods				
Fabric				
Facing				
Fasteners				
Fibers				
Foot (Machine)				
Garment				
Grain				
Hems				
Industrial Sewing				
Interfacing				
Iron-On				
Knitted Fabrics				
Lining				
Lockstitch				
Man-Made Fiber				
Nap				
Non-Woven				
Notch				
Notions				
Operation				
Pattern				
Pile				
Pinking Shears				
Plackets				
Sample				
Selvage				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Shears				
Shirring				
Slide Fasteners				
Tape Measure				
Textile				
Underthreading				
Upper Threading				
Warp				
Weave				
Wool				
Zipper				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Carpentry

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Carpentry

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Carpentry Skills	Objective	Exposure	Training	Production	Employable
Framing & Sheathing	Build a sawhorse					
	Install backing for hanging fixtures and cabinets					
	Install bridging between joists					
	Install diagonal bracing					
	Install fire stops					
	Lay subfloors					

		Objective	Exposure	Training	Production	Employable
Framing & Sheathing (cont'd)	Install wall sheathing					
	Install roof sheathing					
	Install shingles					
Exterior Finish	Install asbestos siding					
	Install aluminum siding					
	Install windows					
	Install door frames					
	Install prefabricated storm door & windows					
	Install exterior trim					
Interior Finish	Install rock lath					
	Install metal lath					
	Install plaster grounds					
	Cut & install dry wall					
	Finish joints & nailheads on dry wall					
	Install furring strips					
	Assist in installing paneling					
	Install strip flooring					
	Install block flooring					
	Install ceiling tile					
	Joint stock with jointer					
	Cut irregular shaped pattern					
	Rip plywood with portable saws					
	Install insulation					

Interior Trim

	Objective	Exposure	Training	Production	Employable
Install base mold					
Install closet trim & shelving					
Install door & window trim					
Install window & door hardware					
Assist with installing cabinets					
Drill holes using portable electric drill					
Sand edges & surfaces with belt & finishing sanders					
Mold straight & curved edges using a router					
Grouting tile					
Install resilient tile					

Vocational
Curriculum Assessment Inventory

Shop: Carpentry

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Carpentry Safety Skills	Objective	Exposure	Training	Production	Employable
Personal Safety Rules	Wear shop clothing appropriate to instructional activity being performed					
	Confine long hair before operating rotating equipment					
	Always wear safety glasses; use suitable helmets & goggles for welding					

		Objective	Exposure	Training	Production	Employable
Personal Safety Rules (cont'd)	Remove ties when working around machine tools or rotating equipment					
	Remove rings & other jewelry when working in shop					
	Conduct yourself in a manner conducive to safe shop practices					
	Use soap & water frequently as a method of preventing skin diseases					
Shop Safety Rules	Keep all hand tools sharp, clean and in safe working order					
	Report any defective tools, machines or other equipment to instructor					
	Retain all guards & safety devices except with the specific authorization of instructor					
	Operate a hazardous machine only after receiving instruction on how to operate machine safely					
	Report all accidents to instructor regardless of nature or severity					
	Operator turns off power & makes certain machine has stopped running before leaving					
	Make sure all guards & barriers are in place & adjusted properly before starting a machine tool					
	Disconnect power from machine tools before performing maintenance task of oiling or cleaning					

		Objective	Exposure	Training	Production	Employable
Shop Safety Rules (cont'd)	Use a solvent only after determining its properties, what kind of work it has to do and how to use it					
	Use correct, properly fitting wrenches for nuts, bolts and objects to be turned or held					
	Keep shop or laboratory floor clear of scraps & litter					
	Clean up any spilled liquids immediately					
	Oily rags or oily waste should be stored in metal containers					
	Clean chips from a machine with a brush - not with a rag or bare hands					
	Do not use compressed air to clean your person or clothing					
	Use only approved scaffolding					
Methods for Orderly Shop	Arrange machinery & equipment to permit safe, efficient work practices & ease in cleaning					
	Stack materials & supplies safely or store in proper place					
	Store tools & accessories safely in cabinets, on racks or in other suitable devices					
	Clear working areas & work benches of debris & other hazards					
	Clean & free floors from obstructions & slippery substances					

Methods for Orderly Shop (cont'd)	Objective	Exposure	Training	Production	Employable
Free aisles, traffic areas & exits of materials & other debris					
Dispose of combustible materials properly or store in approved containers					
Store oily rags in self-closing or spring-lid metal containers					
Know proper procedures to follow in keeping work area clean & orderly					
Keep sufficient brooms, brushes & other housekeeping equipment readily available					

Special Education
Curriculum Assessment Inventory

Shop: Carpentry

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Carpentry Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculation	Match symbols used in math problems to their names				
	Solve math problems involving addition				
	Solve math problems involving subtraction				
	Solve math problems involving division				
	Solve math problems involving multiplication				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculation (cont'd)	Identify numerator and denominator in a given fraction				
	Distinguish between proper, improper and mixed fractions				
	Convert mixed numbers to improper fractions				
	Convert improper fractions to mixed numbers or whole numbers				
	Reduce fractions to lowest terms				
	Write the place value of each digit in a numeral with three decimal places				
	Write numbers in decimal notation				
	Write number words as decimal numerals				
	Write decimals to the nearest whole number, tenth and hundredth				
	Solve problems involving addition of decimals, subtraction of decimals, multiplication of decimals, and division of decimals				
	Write fractions as decimals and percents				
	Write percents as fractions and decimals				
	- - -

Basic Measuring Tools (cont'd)	Ed Objective	Frustration Level	Instructional Level	Independent Level
Write the formula for figuring board feet				
Write the formula for estimating concrete				
Compute board feet and cost				
Estimate number of lineal feet of molding required for a job				
Lay out 90° and 45° angle using a framing square				
Lay out various angles using a protractor and sliding T bevel				
Lay out equal spaces using a rule				
Lay out equal spaces using dividers				
Measure angles using a protractor				
Describe how to check a 90° angle using the 6-8-10 triangle theory				

Special Education
Curriculum Assessment Inventory

Shop: Carpentry

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Carpentry Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Air-drying				
Annular Ring				
Asphalt				
Backblocking				
Backerboard				
Backsplash				
Balloon Framing				
Balustrade				

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	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Band				
Base Cap				
Batten				
Bearing Block				
Bearing Partition				
Bifold Door				
Blade				
Blind-nailing				
Blind Stop				
Board and Batten				
Body				
Bow Warp				
Braced Framing				
BTU				
Built-up Roof				
Bypass Door				
Caneboard				
Cantilever				
Cant Strip				
Cement (1)				
Cement (2)				
Clerestory				
Collar Beam				
Conduction				
Convection				
Corner Bead (1)				
Corner Bead (2)				
Cornice				
Cricket				
Crook Warp				
Crossband				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Cross-nailing				
Cross Partition				
Crown				
Cup Warp				
Dead Load				
Dimpling				
Dormer				
Double-cheek Cut				
Double-coursing				
Double-glazing				
Doubler				
Drop				
Dub Off				
Eaves Trough				
Edge-grained				
Edge Joist				
Elevation				
Escutcheon				
Expansion Joint				
Exposure				
Field				
Fillet				
Finger-jointing				
Fire Cut				
Fire-rated				
Firestop				
Flange				
Flashing				
Fly Rafter				
Frieze				
Frost Line				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
F.R.R.				
Furring				
Gain				
Galvanic Action				
Glue-laminating				
Grade (1)				
Grade (2)				
Grain				
Gusset				
Header Joist				
Hip				
I.I.C.				
Intermediate Stud				
Isolation Joint				
Joint Treatment				
Keyway				
Kiln-drying				
Knee Wall				
Ladder (1)				
Ladder (2)				
Leader				
Leaf				
Level				
Live Load				
Lockset				
Lookout				
Loose Fill				
Lug				
Module				
Moisture Content				
Mud Sill				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Mullion				
Muntin				
O.C.				
Offal				
Open Time				
Ordinance				
Panel (1)				
Panel (2)				
Parallel Partition				
Parquet				
Parting Strip or Stop				
Party Wall				
Pedestal				
P.E.T.				
Pitch				
Plain-sawed				
Plane				
Plastic Laminate				
Plate				
Plate Cut				
Plot Plan				
Plumb Cut				
Pocket Door				
Polyethylene				
Post				
Post and Beam				
Purlin (1)				
Purlin (2)				
Pythagorean Theorem				
Quarter-sawed				
R Factor				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Radiation				
Rafter Seat				
Rail (1)				
Rail (2)				
Rake				
Rebar - short for reinforcing bar				
Regular Rafter				
Return				
Reveal				
Ribband				
Ridgeboard				
Rise (1)				
Rise (2)				
Riser				
Rose				
Rout				
Run (1)				
Run (2)				
Saddle				
Scale (1)				
Scale (2)				
Scarf				
Schedule				
Schematic				
Screed				
Section				
Selvage				
Setback				
Shake				
Shiplap				
Shortening Line				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Shutters				
Sidelight				
Sill				
Single-cheek Cut				
Single-coursing				
Sleepers				
Slope (1)				
Slope (2)				
Solid Bridging				
Spaced Beam				
Spacer				
Splashboard				
Splice				
Splice Plate				
Split				
Spreader				
Stack Wall				
Standards				
Station Mark				
S.T.C.				
Stickers				
Stile				
Strike Plate				
Stringer				
Subflooring				
Subrail				
Swaged				
Tab				
Tail				
Tail Joist				
Thickened Edge				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Toe Kick				
Trestle				
Trimmer				
Truss				
Turned-down Slab				
Twist Warp				
Vapor Barrier				
Vertical-grained				
Walers				
Walking Steps				
Wane				
Warp				
Water Table (1)				
Water Table (2)				
Web				
Winder				
Zoning				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Food Service

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		
11. _____		

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Food Service

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Waitress/Waiter

Food Service Skills	Objective	Exposure	Training	Production	Employable
Takes orders correctly					
Adjusts temperature					
Checks shortening & cleans fryer					
Selects food, egg wash or other types of frying mixes					
Orders supplies					
Cleans up greasy spots promptly					

		Objective	Exposure	Training	Production	Employable
Waitress/Waiter (cont'd)	Housecleaning					
	Breading					
	Seasoning					
	Reads recipes					
	Check cooking					
Sandwich Preparation	Reading recipes					
	Prepare fillings					
	The use of lettuce					
	The use of a knife in cutting					
	Bread and useage for canapes and hors d'oeuvres					
	Refrigeration & storage					
	Spoon or scoop for portion control					
	Types of sandwich					
	Specifies and orders supplies					
	General housecleaning					
Cook's Helper	Checks & reads recipes					
	Mincing, chopping, slicing, dicing					
	Tests temperatures					
	Selects meat					
	Cleans areas of work (housecleaning)					
	Use and care of equipment					
	General cooking rules & methods					
	Selects meats, vegetables & other types of food					

		Objective	Exposure	Training	Production	Employable
Cook's Helper (cont'd)	Operate equipment					
	Cutting and carving					
	Personal ethics					
Baker's Helper	Reading dough formulas					
	The ingredients in dough and their reaction during mixing, proofing and baking					
	Scale all ingredients correctly, proofing and baking					
	Mix to develop dough					
	Knead the dough					
	Proof the dough					
	Makeup into desired shapes & sizes					
	Make at required temperatures					
	Do not over proof the dough					
	Maintains & cleans work area					
Generic Tasks	Reads recipes					
	Ready equipment to be used					
	Uses small hand tools					
	Mincing, chopping, dicing & slicing					
	Cooking vegetables					
	Cleaning vegetables					
	Sanitation & safety					
	Flouring & blending					
	Checks time allowed					
	Care of equipment & general housecleaning					

Vocational
Curriculum Assessment Inventory

Shop: Food Service

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

√ indicates that student has achieved this goal

X indicates that student is working on this objective

	Food Service Safety Skills (Edited from National Safety Council on Food Preparation)	Objective	Exposure	Training	Production	Employable
Preparation	Use dry towels when handling hot skillets					
	Avoid splashing grease on top of range					
	Remove lids of pots slowly					

		Objective	Exposure	Training	Production	Employable
Preparation (cont'd)	Always give notice of "HOT FOOD" when moving a hot container from one place to the other					
	Keep towels used for handling hot foods off the range					
	Avoid over-filling hot food containers					
	Never let long handles of sauce pans or skillets extend into aisles					
	Never turn the handle of any pot toward the fire					
	Get help in lifting or moving any heavy pots or containers					
	Place a lighted match to gas jets before turning on the gas					
	Know the location of fire extinguishers					
	When placing food in hot grease, always let the item slide away from you					
	Keep work station clean at all times					
	At all times have your attention focused on the job at hand					
	Never have glass near any food					
	Never throw any objects in the kitchen					
	Treat injuries immediately					
Hand Equipment	Use the right knife for the job					
	Do not grab for falling knives					
	Always carry a knife with the tip pointing downward & with the cutting edge turned away from body					

		Objective	Exposure	Training	Production	Employable
Hand Equipment (cont'd)	Never talk with a knife in your hand					
	Always cut away from body					
	Never place a knife in hot water					
	Use a cutting board at all times					
	Knives should never be placed in drawers					
	When cleaning or wiping a knife, keep the sharp edge turned away from body					
	Always use a sharp knife					
	Use knives for the purpose for which they were designed					
	Pick up knives by the handle only. Take a firm grip on a knife handle					
	When slicing round objects, cut a flat base					
	Never force a meat saw					
	When using a cleaver, be sure the item to be chopped is setting solidly					
	When grating foods, never work the foods too close to the cutting surface					
Stationary Equipment	Use a wooden stomper when feeding meat					
	Before cleaning or adjusting any machine, be sure all electrical switches are in the "OFF" position & pull the plug					
	Do not wear rings, wrist watch or a tie when operating electrical power equipment					

		Objective	Exposure	Training	Production	Employable
Stationary Equipment (cont'd)	Never start a machine until you are sure all parts are in their proper places					
	All electrical stationary equipment should be grounded					
	Keep hands to the front of the revolving bowl when operating the food cutter					
	Never operate any machine unless you have been trained to use it properly					
	When using electrical power equipment, always follow manufacturer's instructions and recommendations					
Clothing	Wear proper shoes					
	Wear long sleeves that cling tightly to the arms					
	Never wear loose fitting clothing					
	Wear aprons at knee length					
	Tuck in all apron strings					
	Wear the recommended headgear					
China & Glassware	Discard any chipped or cracked china & glassware					
	Never use glassware in forming or preparing food					
	Never force a towel inside a glass to dry it					
	Never clean up broken china or glassware with the hands					

		Objective	Exposure	Training	Production	Employable
China & Glassware (cont'd)	Never place glassware in soapy water					
	When carrying china & glassware from one place to another, be alert & move cautiously					
Floors	When turning on anything electrical, do not stand on a wet floor					
	If anything is spilled on the floor, clean it up immediately					

Special Education
Curriculum Assessment Inventory

Shop: Food Service

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Food Service Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Basic Skills	Solve math problems involving addition				
	Solve math problems involving subtraction				
	Solve math problems involving multiplication				
	Solve math problems involving division				
	Write recipes and/or food formulas				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Basic Skills (cont'd)	Tabulate bills				
	Tabulate sales tax				
	Know money values				
	Make change for customers				
Patron Control Cost	Calculate cost per serving				
	Knowledge of menu pricing				
	Item cost purchasing				
	Calculate food amount for serving				
	Determine can size per serving				
	Determine gratuity from customer's check				
Business Taxes	Calculate federal withholding tax				
	Calculate federal income tax				
	Calculate state income tax				
	Calculate social security				
Measuring	Convert gallons, quarts, pints				
	Convert ounces, pounds				
	Measure teaspoons, tablespoons				
	Estimate weights of dipper sizes				
	Determine weights of can sizes				
	Know symbols for 1/4, 1/2, 2/3 & 3/4				
	Know ladle size				

Special Education
Curriculum Assessment Inventory

Shop: Food Service

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Food Service Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Aging				
A La Carte				
A La Mode				
Al Dente				
Ambrosia				
Antipasto				
Aspic				
Au or Aux				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Au Gratin				
Au Jus				
Baked Alaska				
Baste				
Bechamel				
Breading				
Buffet				
Canape				
Carte Du Jour				
Cavair				
Chef				
Chives				
Chop				
Coat				
Cobbler				
Consomme				
Crepe				
Cube				
Cuisine				
Cut In				
Deglaze				
Demiglace				
Heifer				
Jus				
Knead				
Leek				
Legumes				
Lyonnaise				
Mayonnaise				
Menu				
Meringue				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Mignon				
Minced				
Mirepoix				
O'Brien				
Poach				
Puree				
Reduce				
Roe				
Roux				
Saffron				
Saute				
Scald				
Score				
Sear				
Sift				
Simmer				
Sole				
Stock				
Truffle				
Veloute				
Vichyssoise				
White Wash				
Whip				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Plumbing

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Plumbing

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Training

Plumbing Skills	Objective	Exposure	Training	Production	Employable
Shop safety rules & regulations					
Handling & recognition of plumbing hand tools					
Reading the rule					
Marking with a pencil, soapstone, chalk, scribe					
Marking metal & pipe with a center punch					

Training (cont'd)

	Objective	Exposure	Training	Production	Employable
Marking with scribe or pencil along a straight edge					
Making a straight cut on sheet metal with aviation snips or tin shears					
Tighten and loosen nuts with a box end wrench					
Using a socket wrench with a ratchet					
Tighten and loosen nuts with an open end wrench					
Tighten and loosen fittings with a pipe wrench					
Using an open end pipe wrench					
Using a smooth jaw wrench					
Tightening & loosening screws with a screwdriver (flat & Phillips)					
Tightening & loosening fasteners with allen hex wrenches					
Holding & tightening with a channel rib lock pliers					
Driving nails with a hammer					
Pulling nails with a hammer					
Using a level for leveling					
Drilling holes in wood with an electric drill					
Drilling holes in piping with an electric drill					
Cutting to a line with a cross cut saw					
Using a basin wrench					
Chiseling across a grain					
Chiseling with a cold chisel					
Using and aligning with a drift pin					

		Objective	Exposure	Training	Production	Employable
Training (cont'd)	Cutting with a hacksaw					
	Adjusting & using an adjustable wrench					
	Using a soldering iron & cleaning same with sal ammoniac block					
	Using a tri-stand pipe vise					
	Lighting a torch					
	Shaping smooth surfaces with a file					
Pipes & Fittings	Recognition of various types of steel pipe					
	Recognition of various types of copper tubing					
	Sizing of piping (I.D. measurements)					
	Recognition of steel C.I. and mallable fittings					
	Recognition of copper fittings					
	Recognition of plastic piping & fittings					
	Measuring pipe in plumbing trade (C-C E-C E-E etc.)					
	Cutting steel piping by hand					
	Cutting copper tubing by hand					
	Reaming steel piping by hand					
	Threading steel piping by hand					
Joining Pipe	Join steel pipe to plastic pipe					
	Join copper tubing pipe to copper tubing pipe					
	Join copper tubing to plastic pipe					

		Objective	Exposure	Training	Production	Employable
Joining Pipe (cont'd)	Join copper tubing to steel pipe					
	Join copper tubing with flared connections					
	Swage copper tubing pipe					
	Join plastic pipe to plastic pipe					
	Secure piping with hangers to wood surfaces					
Faucets & Valves	Disassemble & assemble gate valves					
	Disassemble & assemble globe valves					
	Disassemble & assemble stop & waste valves					
	Disassemble & assemble a compression faucet					
	Disassemble & assemble a single lever faucet					
Fixtures	Connect lavatory water supplies					
	Connect lavatory trap (Ess-P-J bends)					
	Install closet supply					
	Install kitchen sink faucet					
	Install sink basket strainers					
	Connect water supplies to sink faucet					
	Install sink trap (Kitchen-Ess-P-J bends)					
	Install continuous waste drain (center or end outlet)					

		Objective	Exposure	Training	Production	Employable
Maintaining Plumbing Systems	Replace washers in valves & faucets					
	Replace a trap on a sink (kitchen & lavatory)					
	Replace sink strainers on a sink (all types)					
Wiring	Stripping romex wiring					
	Place a connector on romex wire					
	Cutting electrical wire with cutters					
	Taping romex wire with friction tape					
	Connecting romex wire with wire nuts					
	Connect romex wire to junction box					
Maintaining Heat Systems	Replace oil cartridge in oil filter					

Vocational
Curriculum Assessment Inventory

Shop: Plumbing

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Plumbing Safety Skills	Objective	Exposure	Training	Production	Employable
Personal Safety Rules	Wear shop clothing appropriate to activity being performed					
	Wear safety classes at all times					
	Wear goggles, shields, helmets as needed for specific job tasks					

		Objective	Exposure	Training	Production	Employable
Personal Safety Rules (cont'd)	Remove or roll up sleeves past elbow on long sleeve shirts before operating power threading machines					
	Remove rings, neck jewelry when working in shop					
	Avoid wrestling, throwing objects and other forms of horseplay					
	Keep your arms and body as nearly straight as possible when lifting heavier objects					
	Good, sturdy leather work shoes should be worn to protect feet from falling objects & from dampness					
	Breathing filter should be used when working job tasks involving excessive dust					
	Ear plugs or protectors should be worn when working in extremely noisy areas					
	Use soap & water regularly as a method of protecting skin on hands and face					
Shop Safety Rules	Keep all hand tools sharp, clean and in safe working condition					
	Report any defective tools, machines or equipment to instructor					
	Operate a hazardous machine only after receiving proper safety instruction					
	Report all accidents regardless of nature or severity to instructor					

Shop Safety Rules (cont'd)

	Objective	Exposure	Training	Production	Employable
Do not remove any safety guards or devices from machinery before operating					
Disconnect power to machines before performing maintenance on same					
Know locations of "Panic Button" shut-off switches for entire shop in case of emergency					
Know location in shop of all fire extinguishers					
Know location in shop of "fire blanket"					
Know location in shop of emergency first aid kit					
Use solvent only after determining its properties and how to apply it					
Make sure all power machines have stopped running before leaving them					
Use correct, properly fitting wrenches for pipes, nuts, bolts and objects to be turned or held					
Always keep hands open on handles when using pipe wrenches without the use of a vise					
Keep shop floor clear of objects, litter, etc.					
Clean up any spilled liquids immediately					
Oily rags should be stored in metal containers					
Clean steel chips from threading dies with a brush and not with a rag or bare fingers					
Always wear protective gloves when working with hot objects					

		Objective	Exposure	Training	Production	Employable
Shop Safety Rules (cont'd)	Make sure all overhead bins and shelves are not overfilled to prevent objects from falling out and causing a head injury					
	Know rules & exits in case of fire emergency					
Maintain an Orderly Shop	All traffic free aisles and exits clear of materials, equipment or debris					
	All power machines and equipment arranged to permit safe work practices					
	Stack materials and supplies safely and store in proper place					
	Store all tools and accessories safely in cabinets, shelves, racks, etc.					
	Clear working areas, overhead areas and work benches of debris and other hazards					
	Dispose of combustible materials properly					
	Clean oily or slippery floors immediately					
	Sweep all debris from floors, tables, dressing area at the end of each class period					
	Know your specific area assigned to be cleaned each day					
	Keep sufficient brooms, brushes, and other housekeeping equipment readily available					
	Report any burned-out overhead lighting bulbs to proper authorities for replacement					
	Make sure no sharp edges from piping on racks are sticking out which may cause an injury					

Special Education
Curriculum Assessment Inventory

Shop: Plumbing

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Plumbing Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculation	Solve math problems involving addition				
	Solve math problems involving subtraction				
	Solve math problems involving division				
	Solve math problems involving multiplication				
	Identify numerator and denominator in a fraction				
	Reduce fractions to lowest terms				
	Change fractions to decimals				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculation	Change decimals to fractions				
	Write percents as fractions and decimals				
	Square roots of numbers 1.00 through 9.99				
	Constants for 45° fittings				
	Constants for 60° fittings				
	Constants for 22½° fittings				
	Constants for 11¼° fittings				
Basic Measuring Tools	Identify basic measuring tools				
	Read the rule to the nearest one-sixteenth of an inch				
	Read a tape measure				
	Measure objects				
	Measure lines to the nearest quarter, eighth and sixteenth of an inch				
	Draw objects to specified dimensions				
	Calculate basic math problems dealing with volume				
	Calculate allowance for fittings				
	Calculate end-to-end measurement				
	Calculate end-to-center measurement				
	Calculate center-to-center measurement				
	Calculate face-to-face measurement				
	Calculate "overall" measurement				
	Calculate pipe length by layout				
	Calculate grade, drop & run				
	Calculate offset, diagonal & rise				
	Calculate diameters of piping				
	Calculate standard weight pipe - diameters, capacities				

Basic Measuring Tools (cont'd)	Ed Objective	Frustration Level	Instructional Level	Independent Level
Estimate size of piping				
Water Measure				
Measure rectangular solids				
Measure cylinders				
Measure spheres				
Word use in leveling				
Math aids in leveling				
Knowledge of basic standard symbols for plumbing, piping & valves				

Special Education
Curriculum Assessment Inventory

Shop: Plumbing

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Plumbing Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Air Gap				
Angle Valve				
Apprentice Plumber				
Area Drain				
Anchors				
Backflow				
Backing				
Back Vent				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Backwater Valve				
Ball Cock				
Ball Valves				
Basket Strainer				
Bathtub				
Bell Trap				
Branch				
Branch Vent				
Building Drain				
Building Sewer				
Building Sanitary Sewer				
Building Storm Sewer				
Building Supply Pipe				
Butterfly Valve				
Check Valve				
Cleanout				
Closet				
Common Seal Trap				
Compression Faucet				
Continuous Waste				
Core Cock				
Corporation Cock				
Curb Stop				
Crown of Trap				
Dip of Trap				
Dishwasher				
Downspout				
Drain				
Drinking Fountain				
Drum Trap				
DWV				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Female Thread				
Finishing				
Fitting				
Fixture Drain				
Floor Drain				
Flow Pressure				
Flush				
Flush Valve				
Full-Bath				
Garbage Disposal				
Gate Valve				
Globe Valve				
Grade				
Half-Bath				
Hangers				
Horizontal				
Hub				
Indirect Waste				
Journeyman				
Kitchen Sink				
Laundry Tray				
Lavatory				
Length				
Main				
Male Thread				
Master Plumber				
Meter				
Offset				
Overflow				
Pipe				
Pitch				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Potable				
P-Trap				
Riser				
Roof Jacket				
Rough-In				
Run				
Seal				
Sewage				
Sewer				
Shower				
Sill Cock				
Soil Pipe				
Stack				
Stop				
Strainer				
S-Trap				
Support				
Syphonage				
Trap				
Trim				
Tube				
Vent				
Washer				
Water				
Waste				
Vertical				
Vanity				
Valve				
Vacuum				
Urinal				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Wiring Skills				
Romex				
Wire				
Stripping				
Cutting				
Taping				
Wire Nuts				
Connectors - Angle				
Connectors - Straight				
Junction Box				
Switch				
Conduit				
Short				
Fuse				
Circuit Breaker				
Panel Board				
Control				
Staple				
Hot				
Ground				
- - -

		Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Heat Skills (cont'd)	Steel				
	Cast-Iron				
	Base				
	Chamber				
	Retort				
	Gauge				
	Supply				
	Return				
	Expansion				
	Tank				
	Flow				
	Coil				
	BTU				
Screwdrivers	Standard Slot				
	Phillips				
	Stubby				
	Offset				
	Reed and Prince				
Wrenches	Open End				
	Box End				
	Combination				
	Adjustable Open End				
	Pipe				
	Flare Nut				

		Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Pliers	Slip Joint				
	Slip Groove				
	Long Nose				
	Plier Wrench				
Hammers	Ballpeen				
	Soft Face				
	Sledge				
	Claw				
Punches	Pin Punch				
	Center Punch				
	Cold Chisel				
	Pry Bar				
	Scratch Awl				
	Wood Chisel				
	Flooring Chisel				
	Bullnose Chisel				
Files	Flat				
	Half-Round				
	Round				
	Triangular				
	Handle				

		Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Sockets Set	Ratchet Handle				
	Socket				
	Deep Socket				
	Hinge Handle				
	Extension				
	Speed Handle				
	Universal Joint				
Tubing Tools	Flaring Tool				
	Tubing Reamer				
	Flaring Block				
	Tubing Cutter				
	Swage Punch				
	Bending Spring				
	Lever Type Bender				
Iron Pipe Tools	Pipe Vise				
	Dies & Die Head				
	Die Stock				
	Reamer				
	Pipe Cutter				
Accessory Tools	Drop Light				
	Hacksaw				
	Nut Drivers				
	Level				

Accessory Tools (cont'd)	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Hex Key Wrenches				
Basin Wrench				
Cutting Oil				
Jab Saw				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Masonry

Individual Transitional Preparation Form

Name of Student _____

Date _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Career Goal _____

_____

Job Selection _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

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Vocational
Curriculum Assessment Inventory

Shop: Masonry

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Masonry Skills	Objective	Exposure	Training	Production	Employable
Leveling, Gaging and Spacing	Gage masonry wall with spacing rule					
	Gage masonry wall with modular rule					
	Gage masonry wall with story pole					
	Determine if surface is plumb, level and square					

		Objective	Exposure	Training	Production	Employable
Leveling, Gaging and Spacing (cont'd)	Match terms associated with builder's level to the correct definitions					
	Label types of levels					
	Label parts of a builder's level					
	State rules pertaining to care of leveling instruments					
	Demonstrate ability to set up & adjust a builder's level					
	Demonstrate ability to perform a differential leveling job by setting elevations for conveyor footing					
	State basic rules concerning care of the four & two foot levels					
	Label methods used to align masonry units					
Laying Basics	Cut a bat closure					
	Cut a queen closure					
	Bond a wall					
	Mix mortar by hand					
	Mix mortar with power mixer					
	Lay a stretcher course					
	Lay a header course					
	Lay corners					
Tooling and Pointing Joints	Tool concave joints					
	Tool rake joints					
	Tool squeeze joints					
	Tool grapevine joints					
	Point a wall					

		Objective	Exposure	Training	Production	Employable
Patterns	Lay rowlock, sailor, shiner & solider courses					
	Lay common bond pattern					
	Lay a flemish bond pattern					
	Lay a stack bond					
	Lay a diamond pattern					
	Lay a herringbone pattern					
	Lay a basketweave pattern					
Wall Construction	Reinforce brick masonry					
	Construct brick veneer wall					
	Construct cavity wall					
	Form a corbel					
Laying Columns	Build square brick columns					
	Build rectangular brick columns					
	Build round columns					
Preparing Foundations & Footings	Build forms for concrete					
	Construct piers					
	Construct a wall containing pilasters					
	Raise a foundation					
Constructing Buildings	Install wall ties					
	Place beams					
	Pour concrete					
	Make reinforced lintels					

		Objective	Exposure	Training	Production	Employable
Constructing Buildings (cont'd)	Set lintels					
	Construct sills (rowlock)					
	Set windows					
	Use anchors to tie wall together					
	Lay a flight of stairs					
Performing Miscellaneous Masonry Work	Clean brick walls					
	Lay glass blocks					
	Lay structural clay tile					
	Lay masonry floors					
	Estimate masonry materials needed					
	Lay ceramic tile					
	Cut ceramic tile by hand					
	Cut ceramic tile with tile saw					
	Grout ceramic tile					
	Clean ceramic tile wall					

Vocational
Curriculum Assessment Inventory

Shop: Masonry

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Masonry Safety Skills	Objective	Exposure	Training	Production	Employable
Personal Safety Rules	Prevent accidents by a safety conscious attitude at all times					
	Be alert to hazards in the shop					
	Never take safety for granted; practice it at all times					
	Wear clothing appropriate to the instructional activity being performed					

		Objective	Exposure	Training	Production	Employable
Personal Safety Rules (cont'd)	Confine long hair before operating rotating equipment					
	Remove earrings, rings & other jewelry when working					
	Wear safety glasses at all times					
	Wear full protective goggles when cutting, chipping & grinding					
	Wear full protective goggles & a disposable type dust mask while mixing or screening mortar					
	Wear a 6" or 9" high hard-soled work shoe					
	Wear gloves when handling sharp objects					
	Read directions before using chemicals					
	Wear rubber gloves & safety glasses when using chemicals					
	Clean dirty goggles					
	Use soap & water frequently					
	- - -

		Objective	Exposure	Training	Production	Employable
Shop Safety Rules (cont'd)	Do not take shortcuts unless they are safe & approved by the instructor					
	Handle mortar with a concern for safety					
	When cutting masonry materials, cut in a direction away from other students					
	Always handle tools with an eye on other students working nearby					
	Is safety-conscious when using ladders					
	If mortar gets in the eyes, never rub it out. Flush with plenty of clean water					
	Inspect scaffolding before getting on					
	Know all scaffolding rules					
	Is very cautious when working near electrical lines or outlets					
	Wears a hard hat if there is an overhead danger					
	Uses the right tool for the right job					
	Do not use the trowel for a hammer					
	Do not hammer on the level					
	Do not cut reinforcement with a brick hammer, chisel or trowel					
	Devote full attention to the task being performed					
	- - -

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	Objective	Exposure	Training	Production	Employable
Proper Way to Lift Heavy Objects (cont'd)					
Keeps back straight					
Does not lift heavy objects without help					
When lifting with another person, lift together at the same time to avoid a strain					
Always make sure he/she can see either around or over the object to avoid stumbling or falling					
When setting the load down, make sure fingers are out from under object					
Sets it down carefully, never drops it					
- - -

		Objective	Exposure	Training	Production	Employable
Rules for a Clean, Well-Arranged Shop (cont'd)	Know proper procedures to follow in keeping work area clean & orderly					
	Keep aisles, traffic areas & exits free of materials, scraps & litter					
	Arrange machinery & equipment to permit safe, efficient work practices & ease in cleaning					
	Dispose of scrap waste material properly in an approved trash container					
	Keep sufficient brooms, brushes & other housekeeping equipment readily available					
	Wipe up any spills of water or oil immediately					
	Store all linseed oil cloths in an airtight can					
	Safety glasses & goggles will be stored in a dustproof, sterile cabinet					
	- - -

Masonry Power Equipment (cont'd)

	Objective	Exposure	Training	Production	Employable
Use grounded receptacles & estension cords when operating power equipment					
Pays attention to what he/she is doing when operating power equipment					
Never put hands inside any moving equipment					
Never make any adjustments to a machine when it is operating					
Be sure adequate ventilation is present when operating equipment that creates dust or fumes					
Only one student at any time will be inside the safety zone of the power equipment					
When you feel ill or not in command of all your senses, do not operate power equipment					
Use full face shields when cutting materials that may bounce back & strike the face					
Use equipment only for purpose intended					
Do not operate electrical tools while standing on a wet surface					
Place a piece of wood or rubber on the wet floor before attempting to operate any power equipment					
Operator turns off power & makes certain machine has stopped running before leaving safety zone					
Disconnect power from machine tools before performing maintenance task of oiling & cleaning					

		Objective	Exposure	Training	Production	Employable
Use of Masonry Saw	Wear goggles, gloves & respirator or dust mask when dry cutting					
	Wear goggles, rubber gloves & rubber apron when wet cutting					
	Keep hands away from blade					
	Keep work area clean					
	Inspect blade for damage before installing					
	Clean & inspect blade-shaft collars & arbors before installing blade					
	Tighten nut on blade shaft just enough to hold blade securely; do not overtighten					
	Operate blade within specified maximum operating speed					
	Stand to the outside of blade path when starting saw					
	Hold materials securely when making cuts					
	- - -

Use of Masonry Power Mixer (cont'd)

	Objective	Exposure	Training	Production	Employable
Caution other students standing nearby not to look into the mixing drum when operating unless they also have on safety eye protection					
Do not overload mixer. Only put in amount of mix recommended by manufacturer for specific size mixer being used					
Do not put the shovel or other objects inside mouth or drum of mixer when it is running					
Never place hands or fingers inside mixer when it is running					
Do not scrape excess mortar from mixer at completion of the mix by reaching inside unless mixer is out of gear and shut off					
When dumping mortar from mixer, be extremely careful not to place fingers or hands near or on the pinch points of the drum					
Always pay attention. Talking to someone or looking in another direction when operating mixer can result in an accident					
Clean mixer with water immediately after each use to remove all mortar. When used again a dirty mixer may throw out pieces of hard mortar that could fly into the eyes					
It is a good practice to always fill gasoline engine mixer's tanks with gasoline at the beginning of the day					
Use a funnel to pour gas into the mixer gas tank					
Gasoline is poisonous. Always wash your hands if you get gasoline on them					

Use of Masonry Power Mixer (cont'd)

	Objective	Exposure	Training	Production	Employable
Get help to move mixer to another location					
Never operate electric mixer on voltage other than that which it is designed for					
Be sure switch is off before plugging mixer into the power source. A quick start can catch the operator by surprise and cause an injury					
Never lay or rest on the mixer when it is operating					
If the mixer makes a noise that is not natural or looks unusual or different, turn it off immediately. Disconnect it from the power source & call the instructor					
If there is an electrical problem with a mixer, or it fails to operate when turned on, call the instructor					
Never attempt to stop a mixer with the hands. Let it stop naturally					

Special Education
Curriculum Assessment Inventory

Shop: Masonry

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Masonry Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculations	Match terms associated with basic trade arithmetic to the correct definitions				
	Calculate basic problems dealing with area				
	Calculate basic problems dealing with volume				
	Calculate basic problems dealing with triangular relationship				
	Explain the 3-4-5 method of squaring corners				

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculations (cont'd)				
State the difference between ratio & proportion				
Solve basic ratio & proportion problems				
Solve basic addition of whole numbers				
Solve basic subtraction of whole numbers				
Solve basic multiplication of whole numbers				
Solve basic division of whole numbers				
Solve basic addition, subtraction, multiplication & division of fractions				
Solve basic addition, subtraction, multiplication & division of decimals				
Convert fractions to decimals				
Convert decimals to fractions				
Write percent as a fraction				
Write percent as a decimal				
- - -

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Estimate area & cost of brick masonry				
Estimate number of block per course in a given measurement				
Estimate number of brick per course in a given measurement				
- - -

Special Education
Curriculum Assessment Inventory

Shop: Masonry

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Masonry Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Absorption				
Absorption rate				
Admixtures				
Air space				
Anchor				
Arch				
Ashlar Masonry				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Backup				
Bat				
Bed joint				
Batter boards				
Blocking				
Bond				
Bond course				
Breaking joints				
Brick				
Brick-acid resistant				
Brick-abode				
Brick-angle				
Brick-arch				
Brick-building				
Bearing walls				
Brick veneer				
Brickwork				
Buttered joints				
Buttress				
Cavity wall				
Center				
Chase				
Chimney				
Chimney lining				
Clip course				
Closer				
Closure				
Column				
Common american bond				
Common bond				
Consistency of mortar				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Coping				
Corbel				
Course				
Cross joints				
Dentil				
Diagonal bond				
Draft				
Dutch bond				
Efflorescence				
English bond				
Extrados				
Expansion joints				
Face				
Face brick				
Facing				
Fat mortar				
Filling in				
Fire clay				
Fire stop				
Flemish bond				
Flue				
Flue lining				
Flush				
Footing				
Full-header				
Flashing				
Frog				
Furrow				
Garden wall bond				
Gauge				
Glazed tile				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Gothic arch				
Grout				
Header				
Header bond				
Herringbone bond				
Head joint				
Hollow wall				
Hydrated lime				
Initial set				
Interlocking				
Intrados				
Jack arch				
Jamb				
Jamb block				
Joint				
Jointer				
Jointing				
Jumbo brick				
Key				
Keystone				
Lap				
Laying overhand				
Laying to bond				
Lead				
Lean mortar				
Lime				
Line				
Line pin				
Linear feet				
Load-bearing				
Lintel				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Mason				
Masonry				
Masonry cement				
Masonry unit				
Mortar				
Mortar board				
Mortar box				
Nominal dimension				
Outrigger				
Overhand work				
Overhang				
Parapet				
Parging				
Partition				
Party wall				
Paving brick				
Pier				
Pilaster				
Plumb bob				
Plumb rule				
Pointing				
Pointing trowel				
Portland cement				
Plugging				
Queen closure				
Quoin				
Rake				
Range line				
Recess				
Reinforced concrete				
Return				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Rowlock				
Sand				
Scaffold height				
SCR brick				
Scutch				
Set				
Sill				
Skewback				
Smoke Chamber				
Slushed joints				
Soap				
Solider				
Solid masonry wall				
Spall				
Span				
Split block				
Stack bond				
Story pole				
Straightedge				
Strecher				
Struct joints				
Temper				
Template				
Tie				
Tile				
Tier				
Tooling				
Toothing				
Trig				
Trimmer arch				
Trowel				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Tuck-pointing				
Veneer				
Veneered wall				
Vertical joints				
Voussoir				
Wall				
Wall plate				
Wall tie				
Wall-bearing				
Washing down				
Water retentivity				
Water table				
Weathering				
Web				
Weep-holes				
Wythe				
Workability				
Working drawings				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Sales

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Sales

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Sales Skills	Objective	Exposure	Training	Production	Employable
Product Knowledge	Identify product's manufacturer					
	Identify product line					
	Give brief product history (sales, length of time on market)					
	Locate product's sizes on shelf					
	Locate product's colors on shelf					

	Objective	Exposure	Training	Production	Employable
Product Knowledge					
Locate product's styles or models on shelf					
Identify product's features					
Identify product's benefits					
Identify what product is made of from descriptive label					
Explain how to maintain product					
Assist customer in removing product from package					
Demonstrate product features					
Assist customer in demonstrating product features					
Assist customer in finding important information on product's package					
Explain store return policy					
Explain product's warranty from manufacturer					
Show warranty information booklet to customer					
Count correct change for customer					
Gift wrap package					
Bag product with stapled receipt					
Make thank-you statement to customer					
- - -

Sales Presentation (cont'd)

	Objective	Exposure	Training	Production	Employable
Explain key features					
Explain key benefits					
Remove product from package					
Demonstrate key features					
Hand product to prospect to demonstrate usage of key features					
Ask questions to determine if prospect likes product					
Handle price objection					
Handle need objection					
Make closing statement					
Write up sales check					
Figure sales tax					
Identify sales tax from sales tax credit					
Calculate total sales					

Vocational
Curriculum Assessment Inventory

Shop: Sales

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Sales Safety Skills	Objective	Exposure	Training	Production	Employable
Keep sales counters clean at all times					
Remove all cartons from floors					
Keep floors clean of any product spills					
Keep cartons away from walk areas					

	Objective	Exposure	Training	Production	Employable
Use safety razors to open cartons					
Do not stack cartons too high					
Do not leave razors on counter where children may pick them up					
Keep all tools behind counters					
Use proper lifting techniques for heavy cartons					
Keep cleaners or solvents out of reach of customers					
Remove all broken items, especially glass, from selling areas					
Report any accidents to your manager immediately					
Know the location of fire extinguishers					
Know where fire exits are located					

Special Education
Curriculum Assessment Inventory

Shop: Sales

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Sales Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Basic Math Skills	Solve math problems involving addition (several items of merchandise and/or sales tax)				
	Solve math problems involving subtraction (on merchandise returns)				
	Solve math problems involving multiplication (to figure sales tax)				
	Solve math problems involving multiplication (when there is a % off)				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Basic Math Skills (cont'd)	Solve math problems of multiplication involving multiple purchase of same items				
	Solve math problems involving division (figure unit price when price per dozen is known)				
	Calculating amount of change for customers				
Sales Related Computations	Tabulate sales checks by putting figures in columns connecting				
	Understand symbols - 1/2 off, 1/4 off				
	Understand symbols - 10% off, 25% off, 30% off, 40% off and 50% off				
	Convert decimals to %				
	Convert % to decimals				

Special Education
Curriculum Assessment Inventory

Shop: Sales

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Sales Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Salesmanship				
Retail selling				
Industrial selling				
Promotion				
Distribution				
Market				
Marketing				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Advertising				
Personal selling				
Needs				
Wants				
Goods				
Services				
Customer				
Prospect				
Product knowledge				
Product features				
Product benefits				
Brand name				
Trademark				
Packaging				
Model				
Price				
Product line				
Credit				
Delivery				
Product uses				
Manufacturer				
Product composition				
Informative label				
Descriptive label				
Grade label				
Warranty				
Guarantee				
Discount				
List Price				
Quantity discount				
Sales presentation				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Preapproach				
Approach				
Merchandise greeting				
Service greeting				
Informal greeting				
Opening barrage of key features				
Features				
Demonstration				
Objection				
Forestalling objections				
The close				
Assumption close				
Special concession close				
Customer relations				
Customer complaint				
Sales manager				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Cosmetology

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Cosmetology

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Cosmetology Skills (Shampooing & Rinsing)	Objective	Exposure	Training	Production	Employable
Preparing Shampoos					
Diluting detergent					
Dissolving granules					
Determining amount of each to use					
Determining which shampoo to use					

		Objective	Exposure	Training	Production	Employable
Preparing Patron	Use of neck strip, cape, towel					
	Prepare hair for shampoo					
	Remove net & pins; brush hair					
Adjust Shampoo Chair to Sink	Seat patron properly					
	Adjust head to sink; apply wax paper					
Applying Shampoo	Determine type & amount of shampoo					
	Wet hair; apply shampoo					
	Cover all areas of scalp					
	Rinse the hair					
	Regulate the temperature of the water					
	Proper position of hands during shampoo					
	Proper position of cosmetologist					
	Test for cleanliness					
	Remove moisture from the hair					
	Wrap head in a towel & return to work station					
Sterilization & Sanitation	How to prepare sterilizing solution					
	How to prepare & sterilize combs & brushes					

		Objective	Exposure	Training	Production	Employable
Judging Hair Colors As To:	Hair structure					
	Hair texture					
	Hair porosity					
	Hair elasticity					
	Hair color					
	Abnormal hair conditions					
Recognizing Damaged Hair Conditions Due To:	Permanent waving (cold)					
	Permanent waving (heat)					
	Sun					
	Hair bleaches					
	Hair colorings					
	Soap shampoos					
	Soapless shampoos					
	Other products					
How to Prepare And/Or Use:	Peroxide rinse					
	Acid rinse					
	Henna rinse					
	Color rinse					
	Cream rinse					
	Medicated rinse					

	Cosmetology Skills (Basic Operations)	Objective	Exposure	Training	Production	Employable
Preparing the Patron	Arrange sterilized supplies & implements					
	Beautician washes her hands					
	Examine condition of patron's neck and scalp					
	Apply neck strip & cape					
	Shampoo hair					
Rinsing Patron's Hair	Select suitable hair rinse					
	Prepare rinse mixture					
	Apply rinse mixture as per instructions					
	Check results of rinse on patron					
	Apply final water rinse					
	Style hair					
Final Clean-Up	Discard used supplies					
	Place supplies in their proper place					
	Clean booth					
	Sanitize implements & store in cabinet sterilizer					
	Beautician washes her hands					

Vocational
Curriculum Assessment Inventory

Shop: Cosmetology

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Cosmetology Safety Skills	Objective	Exposure	Training	Production	Employable
Clean shampoo bowl & remove hair from basket					
Dampen a piece of cotton with 70% alcohol & sanitize neck of the bowl					
Do not permit shampoo to get in the patron's eyes					

	Objective	Exposure	Training	Production	Employable
Protect patron's ears with small pieces of cotton if she is sensitive to water					
Test water temperature on your inner wrist before applying it on patron's head to make sure it is not too hot or cold					
Do not permit fingernails to scratch the scalp. Use only the cushions of the fingers for scalp manipulations					
Always towel blot excess moisture from patron's hair before she leaves the shampoo bowl					
Do not turn the dryer to hot if the patron is subject to high blood pressure					
Do not permit any water to remain on the floor around the shampoo bowl if any water should accidentally get on the floor					
When draping a patron, do not allow the shampoo cape to come in contact with the patron's skin					
Use only sanitized combs, brushes, towels & all implements for each patron					
Keep all shampoos & materials labeled					

Special Education
Curriculum Assessment Inventory

Shop: Cosmetology

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Cosmetology Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Measures cups				
Measures pints				
Measures quarts				
Measures gallons				
Computes minutes				
Computes seconds				
Multiplies a 2-3 digit number by a 1 digit number				

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Multiplies a 2-3 digit number by a 2 digit number				
Divides a 3-4 digit number by a 1 digit number				
Divides a 3-4 digit number by a 2 digit number				
Subtracts a 3-4 digit number from a 3-4 digit number				
Adds a 3-4 digit number and a 3-4 digit number				
Adds fractions with like denominators				
Adds fractions with unlike denominators				
Writes a fraction to represent a given part of a whole unit				
Subtracts fractions with like denominators				
Subtracts fractions with unlike denominators				
Writes decimals to ten-thousandths				
Rounds decimals to nearest tenth, hundredth				
Adds decimals - ten				
Subtracts decimals				
Multiplies decimals by a whole number				
Divides decimal by a decimal				
Computes comparable value of pennies, nickles, dimes, quarters, half dollars				
Computes change for $1.00				
Computes change for bills of $10.00 and less				

Special Education
Curriculum Assessment Inventory

Shop: Cosmetology

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Cosmetology Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Alkaline				
Coconut oil				
Cream Shampoo				
Crown				
Hair line				
Sanitize				
Dry shampoo				
Hydraulic chair				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Lather				
Manipulation				
Nape				
Neck strip				
Egg shampoo				
Dilute				
Soaping				
Soapless oil				
Tepid				
Water softener				
Concentrate				
Sheen				
Body				
Softens				
Solid				
Dissolve				
Brush applicator				
Bottle applicator				
Cotton applicator				
Henna rinse				
Camomile rinse				
Color rinse				
Sterilize				
Sanitize				
Sanitation				
Sterilizer				
Receptacle				
Vinegar rinse				
Bluing rinse				
Cream rinse				
Peroxide rinse				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Acetic acid				
Silver rinse				
Platinum rinse				
Medicated rinse				
Yellow cast				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Electrical

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Electrical

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Electrical Skills	Objective	Exposure	Training	Production	Employable
Proper Care & Use of Hand Tools	Screwdrivers					
	Diagonal pliers					
	Lineman pliers					
	Needlenose pliers					
	Slip joint pliers					
	Vice grip pliers					
	Electrician's knife					

Proper Care & Use of Hand Tools

	Objective	Exposure	Training	Production	Employable
Awl					
Wire strippers					
Hacksaw					
Woodsaw (rip & crosscut)					
Micrometer					
AWG					
Adjustable wrench (cresent)					
Pipe wrench (stillsen)					
Combination wrench					
Allen wrench					
Files					
Brace and bit					
Conduit cutter					
Conduit threader					
Conduit reamer					
Carpenter's square					
Level					
Cold chisel					
Wood chisel					
Machinist hammer					
Mallet					
Tape measure					
Spring joint rule					
T square					
Plumb bob					
File card					
Nut drivers					
Socket wrench					
Center punch					
Prick punch					
Pin punch					

		Objective	Exposure	Training	Production	Employable
Proper Care & Use of Hand Tools (cont'd)	Screw gauge					
	Feller gauge					
	Depth gauge					
	Taps and dies					
	Adjustable reamers					
	Chassis punches					
	Fuse puller					
	Tin snips					
	Hydrometer					
Proper Use & Application of Tapes	Plastic					
	Rubber					
	Cotton					
	Friction					
	Varnished cambric					
	Fiberglass					
	Insulation putty					
Preparation of Splices	Pig tail					
	Tap					
	Western Union wire					
	Western Union cable					
	Fixture					
Properly Solder Connections	Soldering gun					
	Soldering iron					
	Induction gun					
	Soldering copper					
	Propane torch					

	Objective	Exposure	Training	Production	Employable
Proper Use & Care of Meters					
Ammeter					
Voltmeter					
Wattmeters (1 & 3 phase)					
Ohmmeter					
Multimeter					
Varmeter					
Power facter meter					
Frequency					
Pyrometer					
Wheatstone bridge					
Phase rotation					
Synchroscope					
Stroboscope					
Tachometer					
Capacitor tester					
High voltage tester					
Megger					
Clamp-on ammeter-voltmeter					
Proper Use & Care of Power Tools					
Pistol drill					
Portable saw					
Disc grinder					
Drill press					
Conduit cutter & threader					
Pedestal & table grinder					
Power hacksaw					
Mica undercutter					

	Objective	Exposure	Training	Production	Employable
Installing Residential Service					
Read residential wiring diagrams					
Interpret the National Electrical Code					
Determine calculated load					
Determine service entrance conductor size					
Determine general lighting load					
Determine appliance circuit load					
Determine number of branch circuits					
Determine number of small appliance branch circuits					
Apply the demand factor					
Install a service mast					
Install service head					
Install meter base					
Install load center					
Install ground electrode					
Bond service ground to water main					
Install load service breakers					
Install load center fuses					
- - -

Non-Metallic Residential Wiring Installation (cont'd)

	Objective	Exposure	Training	Production	Employable
Mount receptacle boxes					
Mount light outlet boxes					
Mount offset bar hanger					
Mount junction boxes					
Drill cable holes in studs & joists					
Notch studs & install steel plates					
Pull romex cable					
Install box connectors					
Use cable clamps in boxes					
Staple romex cable					
Clamp romex cable					
Remove box knockouts					
Connect convenience receptacles					
Use grounding clips					
Connect single-pole switches					
Connect three-way switches					
Connect four-way switches					
Connect incandescent lights					
Connect incandescent dimmers					
Connect fluorescent lights					
Connect fluorescent dimmers					
Connect interchangeable units					
Connect electric heating					
Connect electric heating thermostats					
Connect electric water heaters					
Connect electric range					
Connect electric clothes dryer					
Connect electric dish washer					

		Objective	Exposure	Training	Production	Employable
Non-Metallic Residential Wiring Installation (cont'd)	Connect electric garbage disposal					
	Connect water pump					
	Connect overhead garage door opener					
	Complete electrical inspection form					
	Use wire nuts					
	Use wire bugs					
Electric Metallic Tubing (EMT) Installation	Cut EMT					
	Ream EMT					
	Clamp EMT					
	Bend EMT					
	Use EMT couplings					
	Use EMT connectors					
	Use insulated bushings					
	Pull wire					
	Use a fish tape					
Rigid Conduit Installation	Cut rigid conduit					
	Ream rigid conduit					
	Thread rigid conduit					
	Clamp rigid conduit					
	Bend rigid conduit					
	Make conduit nipples					
	Install connectors					
	Install couplings					
	Install lock rings					

		Objective	Exposure	Training	Production	Employable
Rigid Conduit Installation (cont'd)	Install insulating bushings					
	Drill holes in masonry using star drills					
	Drill holes in masonry using masonry drills					
	Install fasteners in masonry					
Flexible Conduit Installation	Cut flexible conduit					
	Clamp flexible conduit					
	Install connectors					
	Install couplings					
	Install insuliners					
Low Voltage Installation	Install low voltage transformers					
	Install bells, buzzers & chimes					
	Run low voltage wire					
	Install low voltage push buttons					
	Install door lock					
	Install annunciator					
	Install burglar alarm					
	Install fire alarm					
Proper Use and Care of Lead-Acid Storage Batteries	Mix electrolyte					
	Add electrolyte to a battery					
	Add water to a battery					
	Clean battery terminals					
	Clean battery surface					

		Objective	Exposure	Training	Production	Employable
Proper Use and Care of Lead-Acid Storage Batteries (cont'd)	Test battery with a hydrometer					
	Test battery with a voltmeter and ammeter					
	Conduct a normal charge					
	Conduct a fast charge					
	Connect batteries for different voltages					
	- - -

Direct Current Rotating Equipment (cont'd)

	Objective	Exposure	Training	Production	Employable
Replace d-c motor brushes					
Reseat d-c motor brushes					
Use a commutator stone					
Use a commutator burnisher					
Check brush pressure with a spring gauge					
Remove and replace ball bearings					
Remove and replace sleeve bearings					
Properly lubricate bearings					
Connect d-c motors to starters					
Connect d-c motors to controllers					
Connect pressure switches					
Connect vacuum switches					
Connect limit switches					
Connect start-stop buttons					
Read schematic diagrams					
Read controller wiring diagrams					
Determine correct branch circuit wire size					
Determine correct overcurrent protection					
Connect d-c shunt generator					
Connect d-c series generator					
Connect d-c cummulative compound generator					
Connect d-c differential compound generator					
Connect interpoles					
Connect compensating windings					
Connect generators to control panel					
Parallel d-c generators					

		Objective	Exposure	Training	Production	Employable
Direct Current Rotating Equipment (cont'd)	Connect equalizer connection between generators					
	Connect d-c generator voltage regulators					
	Shift electrical load between d-c generators					
	Shift brushes to the neutral plane					
	- - -

Direct Current Circuitry Theory (cont'd)

	Objective	Exposure	Training	Production	Employable
Understand speed regulation					
Understand factors that affect voltage regulation					
Apply Fleming's Left-hand Rule					
Understand the purpose and use of the diverter					
Understand mutual inductance					
Understand self-inductance					
Able to determine efficiency					
Recognize drum and gramme-ring armatures					
Understand lap connected armatures					
Understand wave connected armatures					
Understand commutator pitch					
Understand the need for equalizer connections in a lap connected armature					
Understand coil pitch					
Understand the frogs leg winding					
Understand critical field resistance					
Understand reasons why a generator fails to build-up					
Understand dynamic braking					
Understand the operation of magnetic blowouts					
Understand the operation of eutectic overload relay					
Use the prony brake					
Understand methods of d-c motor acceleration					

Alternating Current Rotating Equipment

	Objective	Exposure	Training	Production	Employable
Understand the principle of operation of the a-c induction motor					
Understand how the a-c induction motor produces a rotating magnetic field					
Able to reverse rotation of a three-phase induction motor					
Able to reverse rotation of a single-phase induction motor					
Able to reverse rotation of a repulsion-start induction-run motor					
Test a capacitor for proper operation					
Make a three-phase wye connection					
Make a three-phase delta connection					
Recognize a squirrel-cage, wound-rotor and a synchronous motor					
Determine the number of poles in an a-c motor					
Determine the number of pole phase groups in a three-phase motor					
Rewind a single-phase motor					
Rewind a three-phase motor					
Replace the centrifugal switch in a single-phase motor					
Connect a-c motors to their controllers					
Connect a-c alternators to their switchboard					
Parallel a-c alternators using synchroscope					

Alternating Current Rotating Equipment (cont'd)

	Objective	Exposure	Training	Production	Employable
Shift electrical load between alternators					
Shift reactive load between alternators					
Connect voltage regulators in a-c alternators					
Operate synchronous motor					
Operate a synchronous motor to correct power factor					
Test a-c machine windings for opens, shorts and grounds					
Connect dual voltage stators in series-star					
Connect dual voltage stators in parallel-star					
Connect dual voltage stators in series-delta					
Connect dual voltage stators in parallel-delta					
Connect wound-rotor motor as a frequency changer					
Analyze a-c circuits containing R					
Analyze a-c circuits containing L					
Analyze a-c circuits containing C					
Analyze a-c circuits containing R-L-C in series					
Analyze a-c circuits containing R-L-C in parallel					
Analyze a-c circuits containing R-L-C in series-parallel					
Analyze a-c circuits for series resonance					
Analyze a-c circuits for anti-resonance					

		Objective	Exposure	Training	Production	Employable
Alternating Current Rotating Equipment (cont'd)	Analyze a-c circuits for impedance					
	Analyze a-c circuits for apparent power					
	Analyze a-c circuits for reactive power					
	Analyze a-c circuits for true power					
	Analyze a-c circuits by the use of vectors					
Transformers	Determine polarity of transformer terminals using d-c voltmeter & battery method					
	Determine polarity of transformer terminals using a-c voltmeter method					
	Determine polarity of transformer terminals using visual method					
	Identify primary & secondary terminals if manufacturer's markings are missing					
	Identify additive & subtractive wound transformers					
	Connect primaries & secondaries of two single-phase transformers in series					
	Connect primaries & secondaries of two single-phase transformers in parallel					
	Connect both primaries & secondaries of two single-phase transformers in series					
	Connect both primaries & secondaries of two single-phase transformers in parallel					

Transformers (cont'd)

	Objective	Exposure	Training	Production	Employable
Connect autotransformer to increase voltage					
Connect autotransformer to decrease voltage					
Connect three single-phase transformers star-star					
Connect three single-phase transformers delta-delta					
Connect three single-phase transformers star-delta					
Connect three single-phase transformers delta-star					
Connect two single-phase transformers in "open delta"					
Determine core losses of a transformer by using "open circuit test"					
Determine copper losses of a transformer by using "short circuit test" or "impedance test"					
Determine efficiency of a transformer at full load					
Determine line & phase voltage & current for a star-star connected transformer					
Determine line & phase voltage & current for a delta-delta connected transformer					
Determine line & phase voltage & current for a star-delta connected transformer					
Determine line & phase voltage & current for a delta-star connected transformer					
Observe all safety precautions when working with potential & current transformers					

	Objective	Exposure	Training	Production	Employable
Transformers (cont'd)					
Determine percent of voltage regulation of transformer					
Troubleshoot a faulty transformer					
- - -

Alternating Current Circuitry Theory (cont'd)

	Objective	Exposure	Training	Production	Employable
Know how to control alternator frequency					
Understand principle of operation of a-c induction motor					
Understand operation of a single-phase a-c induction motor					
Understand operation of the universal motor					
Understand operation of the repulsion-induction motor					
Understand how to connect dual voltage motors					
Solve for synchronous speed of a-c induction motors					
Understand slip					
Determine rotor frequency					
Determine rotor power factor					
Understand principle of operation of squirrel-cage rotor					
Understand principle of operation of double squirrel-cage rotor					
Understand torque characteristics of induction motors					
Understand characteristics of amortisseur winding in the synchronous motor					
Principle of power factor correction with the synchronous condenser					
Understand effects of excitation of a synchronous condenser					

Vocational
Curriculum Assessment Inventory

Shop: Electrical

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Electrical Safety Skills	Objective	Exposure	Training	Production	Employable
Personal	Appropriate footwear					
	Clothing shall not constitute a hazard					
	Appropriate dress for the job task					
	Hair shall be contained					

		Objective	Exposure	Training	Production	Employable
Shop Cleanliness	Clean machines & immediate areas daily					
	Dispose of oily rags & scraps of metal debris in oily rag disposal container					
	Any lubricants or cutting oils shall be stored in areas provided for those substances					
	Help in shop clean up					
	Any grease or oil shall be wiped up immediately with cloths					
Power Machinery	Power operated equipment shall be energized only by personnel familiar with their operation					
	Instructor's permission shall be secured before using any machinery or power device					
	Eye protection shall be worn by anyone operating rotation power machinery as well as anyone in adjacent areas of the equipment					
	Full face shields shall be worn when operating power grinders, wire brushes and drill presses					
	Anyone entering the lab shall wear eye protection upon entrance if lab machinery is being used (Note: Instructor shall be notified of anyone entering lab during instruction)					
	Personnel shall not talk to nor otherwise distract anyone using power machinery					

		Objective	Exposure	Training	Production	Employable
Electrical Safety	Extreme care should be exercised when working on any equipment connected to the volt bus duct					
	NEVER work on an energized circuit except for periods of troubleshooting					
	NEVER work on shop equipment or circuits unless an instructor is present					
	Discharge all capacitors prior to working on a circuit containing capacitors					
	Defective test equipment should not be used. Inform the instructor					
Safety Equipment	Proper use of safety glasses					
	Proper use of goggles					
	Proper use of face shield					
	Proper use of rubber gloves					
	Proper use of rubber apron					
	Proper use of rubber mats					
	Proper use of caution tags (DO NOT ENERGIZE)					
Shop Air	Safety eye protection shall be worn when using shop air to blow debris or clean objects					
	Air spinning bearing assemblies is prohibited					
	Never direct air stream toward personnel					

		Objective	Exposure	Training	Production	Employable
Conduct of Personnel	All persons in the lab shall maintain activities that are responsible & safe at all times					
	Persons using lab facilities shall be alert at all times & aware of activities around them					
	Unauthorized persons shall not use lab or equipment					
Emergencies	All injuries shall be reported to instructor immediately					
	In the case of emergencies caused by power operated equipment "Panic Buttons" are provided on each wall of the lab. Depressing the red buttons will shut off power to all outlets & devices. Notify the instructor immediately to this action					
Sickness or Personnel Emergencies	Always inform instructor if feeling ill					
	Do not attempt to operate power machinery if under doctor's prescribed drugs					
	Inform instructor of any personal situation that may require his knowledge to deal with in an emergency situation (i.e. you were sick recently, gave blood, etc.)					

Special Education
Curriculum Assessment Inventory

Shop: Electrical

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Electrical Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculations	Solve math problems involving addition				
	Solve math problems involving subtraction				
	Solve math problems involving division				
	Solve math problems involving multiplication				
	Identify numerator and denominator in a given fraction				
	Convert mixed numbers to improper fractions				

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Calculations (cont'd)				
Reduce fractions to lowest terms				
Write numbers in scientific notation				
Write the place value of each digit in a numeral with three decimal places				
Write fractions in decimal notation				
Solve problems involving addition, subtraction, multiplication and division of decimals				
Change decimals or fractions to percentages				
Write percentages as fractions & decimals				
Plot values & angles using vector notation				
Transpose a basic formula to derive other values				
Measuring Skills				
Read a tape measure to the nearest sixteenth of an inch				
Measure objects & spaces to the nearest sixteenth of an inch				
Convert a small unit of measurement to larger unit (ex. milliamps to amps)				
Convert a large unit of measurement to smaller unit (ex. volts to millivolts)				
Interpret values associated with nonlinear scales				
Interpret values associated with linear scales				
Measure angles with a protractor to the nearest degree				

Special Education
Curriculum Assessment Inventory

Shop: Electrical

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Electrical Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
AC - Alternating Current				
AC generator				
Ampere				
Ampere hour				
Apparent power				
Armature				
Armature reaction				
Atom				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Automatic starter				
Auxillary contact				
Average value				
AWG - American Wire Gauge				
Axial center				
Bar magnet				
Battery				
Binding post				
Brush				
Brush holder				
Capacitance				
Capacitor				
Capacitor start motor				
Capacity				
CW, CCW				
Circuit				
Circuit breaker				
Circular mil				
Coil				
Collector rings				
Commutator				
Compound wound motor				
Condenser				
Conductor				
Contact				
Contactor				
Copper losses				
Counter EMF				
Current				
Cycle				
D'arsonval meter				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
DC - Direct Current				
Depolarizer				
Dielectric				
Duty - Continuous				
- Short time				
- Intermittent				
- Periodic				
- Varying				
Dynamometer				
Dynamotor				
Eddy current loss				
Efficiency				
Effective value				
Electric motor				
Electrically reversible motor				
Electrolyte				
Electromagnet				
Electromotive force				
Electron				
Enclosure				
Energy				
Eutectic Alloy				
Field coil				
Flexible coupling				
Frame				
Frame size				
Frequency				
Fuse				
Galvanometer				
Generator				
Horsepower				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Hydrometer				
Hysteresis				
Induced EMF				
Induction				
Induction motor				
Insulation resistance				
Insulator				
IR drop				
Iron vane meter				
Jogging (Inch)				
Kilowatt				
Laminations				
Lamp				
Lamp cord				
Lenz's Law				
Load				
Lodestone				
Magnet				
Magnetic contactor				
Magnetic controller				
Magnetic field				
Matter				
Micro				
Mil				
Milli				
Molecule				
Motor				
Motor - generator set				
Multi-speed motor				
Multimeter				
Multiplier				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Negative				
Nema				
Neutron				
No load voltage				
Nucleus				
Ohm				
Ohmmeter				
Ohm's Law				
Ohms per volt				
Open circuit				
Open core				
Overload relay				
Parallel circuit				
Peak				
Permanent magnet				
Phase - single				
- three				
Pilot device - float-switch				
- foot-switch				
- limit-switch				
- pressure-switch				
- temperature-switch				
Plugging				
Polarity				
Pole				
Pole piece				
Polyphase				
Positive				
Power				
Power factor				
Primary cell				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Primary winding				
Proton				
Pushbutton				
Rating				
Reactance				
Rectifier				
Relay				
Reluctance				
Repulsion-start motor				
Resistance				
Resistor				
Rheostat				
RMS value				
Rotor				
Safety switch				
Schematic diagram				
Secondary				
Secondary cell				
Selector switch				
Sensing device				
Series circuit				
Series wound motor				
Service factor				
Shaded pole motor				
Short circuit				
Shunt wound motor				
Silicones				
Single-phase				
Slip rings				
Solenoid				
Specific gravity				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Split-phase motor				
Square mil				
Squirrel-cage winding				
Starter				
Starting switch, centrifugal				
Starting torque				
Static electricity				
Stator				
Step-down transformer				
Submersible motor				
Switch				
Synchronous motor				
Terminal				
Thermistor				
Thermocouple				
Thrust bearing				
Timer				
Torque				
Transformer				
Turns ratio				
U/L				
Universal motor				
Varistor				
Volt				
Voltage				
Voltage rating				
Voltaic cell				
Volt-ampere				
Watt				
Watt-hour				
Wire				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Work				
Wound rotor induction motor				
Yoke				
Zero adjuster				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Welding

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Welding

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Welding Skills	Objective	Exposure	Training	Production	Employable
Oxy-Acetylene Welding	Learn oxy-acetylene safety rules					
	Learn oxy-acetylene terms					
	Correctly set up oxy-fuel equipment					
	Cut a 90° straight cut on mild steel plate					
	Cut a 45° bevel cut on mild steel plate					

	Objective	Exposure	Training	Production	Employable
Oxy-Acetylene Welding (cont'd)					
Cut different size circles on mild steel plate					
Correctly set up the automatic track torch					
Cut straight lines using the track torch					
Weld a bead on 12ga. sheet					
Weld a corner fusion joint on 12ga. sheet					
Weld a butt joint on 12 and 14ga. sheet					
Weld a Tee joint on 12 and 14ga. sheet					
Braze weld a bead on 14ga. sheet					
Braze weld a butt joint on 14ga. and 18ga. sheet					
Braze weld a lap joint on 14ga. sheet					
Shielded Metal Arc Welding					
Learn safety rules of S.M.A.W.					
Learn terms of S.M.A.W.					
Weld beads with tie. ins with E6013, E7014, E6010, E7018, E8018C3					
Weld flat pads using E6013, E7018, E8018C3					
Weld butt joints using E6013, E6010, E7018					
Weld 3 pass fillet welds on T joints using E6013, E7014, E7018, E8018C3					
Weld single pass lap joints using E6013, E7014, E7018					
Tack weld in all positions					
Complete 3-7 in all positions (horizontal, vertical and overhead)					

		Objective	Exposure	Training	Production	Employable
M.I.G. Welding	Learn terms associated with M.I.G. welding					
	Set up M.I.G. welding equipment					
	Choose correct filler metal & size for the job					
	Choose correct gas for the job					
	Change wire spools & re-thread a M.I.G.					
	Make tack welds with a M.I.G.					
	Run beads on 1/8 and 3/16 plate					
	Weld a Tee joint					
	Weld a full penetration butt joint					
	Practice build up on heavy plate					
	Move on to out of position welding					
	- - -

		Objective	Exposure	Training	Production	Employable
T.I.G. Welding (cont'd)	Weld a corner fusion weld using mild steel, stainless steel & aluminum					
	Make the above welds in all positions					
Blueprint	Learn terms associated with blueprint reading					
	Draw a simple three view sketch					
	Read blue prints & identify different types of lines					
	Identify important dimensions					
	Draw a pictorial from a blueprint					
	Construct & weld a project from a blueprint					

Vocational
Curriculum Assessment Inventory

Shop: Welding

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Welding Safety

Welding Safety Skills	Objective	Exposure	Training	Production	Employable
Application of federal safety colors - Red					
- Yellow					
- Orange					
- Purple					
- Green					
- Black & White					

Welding Safety (cont'd)

	Objective	Exposure	Training	Production	Employable
Wear appropriate shop clothing					
Confine long hair					
Wear safety glasses					
Wear correct eye protection when welding or cutting					
Remove all jewelry when working					
Make sure there are no flammable liquids nearby					
Review all arc welding safety rules - Handle gas cylinders with care					
- Never weld in a confined area without ventilation					
- Always ground machine properly					
- Wear rubber boots when welding in damp areas					
- Stand on solid items only					
- Keep eye protection in place (curtains)					
- Do not weld or cut directly on concrete					
- Never use more than 15 p.s.i. of acetylene pressure					
- Do not oil or grease regulators					
- Do not weld or cut closed, jacketed tanks or vessels					
- Light torch with friction lighters only					
- Do not use gas cylinders as rollers					
- Use exhaust at the sources when welding					

General Shop Safety Rules

	Objective	Exposure	Training	Production	Employable
Keep tools in good condition					
Retain all guards & barriers					
Report all accidents to instructor or foreperson					
Turn off electrical power before cleaning or servicing a machine					
Keep shop floors clean					
Clean up spills quickly					
Stack materials correctly					
Store combustible materials properly					
Learn classes of fires & correct fire extinguishers to combat them					
Learn to properly operate fire extinguishers					

Special Education
Curriculum Assessment Inventory

Shop: Welding

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Basic Skills: Welding Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Solve math skills involving addition				
Solve math skills involving subtraction				
Solve math skills involving multiplication				
Solve math skills involving division				
Reduce common fractions				
Convert decimals to fractions				
Reduce inches to feet & inches				

Math Job Skills

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Find the circumference of circles				
Find the volume of a cylinder				
Find the volume of a rectangular or square container				
Read rulers & tape measures to nearest one-sixteenth of an inch				
Estimate job cost				
Find the radius & diameter of circles				
Find the center of rectangles & squares & circles				
Understand flow rates - cubic feet per hour				
- pounds per square inch				
Measure objects				
Layout 45° mitered joints				

Special Education
Curriculum Assessment Inventory

Shop: Welding

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Welding Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Acetylene				
Alloy				
Alloy Steel				
Alternating Current (A.C.)				
Amperage				
Arc				
Arc Blow				
Arc Welding				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Argon Gas				
Backfire				
Backhand Welding				
Bead				
Bevel				
Brazing				
Butt Weld				
Cable				
Carbon				
Carbon Steel				
Carburizing Flame				
Collet				
Collet Body				
Color Coding				
Conductivity				
Cored Wire				
Corner Weld				
Crater				
Critical Temperature				
Cutting Torch				
Cylinder				
Direct Current (D.C.)				
Ductile				
Electrical Conductivity				
Electrode				
Electrode Holder				
Fatigue Strength				
Feeder Roll				
Filler Metal				
Fillet Weld				
Filter Plate				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Flame Cut				
Flowmeter				
Flux				
Forehand Welding				
Fusion				
Gas Cup				
Gauge				
Ground Clamp				
Hardfacing				
Hardness				
Helmet				
Hose				
High Frequency Current				
Inert Gas				
Infrared Rays				
Ingot				
Injector Torch				
Inner Cone				
Land				
Lap Joint				
Longitudinal Angle				
Low Alloy Steel				
M.I.G.				
Metallurgy				
Mill Scale				
Neutral Flame				
Nozzle				
Orifice				
Oscillate				
Oxidizing Flame				
Oxy-acetylene Welding				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Oxy-acetylene Cutting				
Oxygen				
Parent Metal				
Penetration				
Plate Steel				
Polarity				
Porosity				
Preheat				
Puddle				
Rectifies				
Regulator				
Residual Stress				
Root				
Root Opening				
Safety Cap				
Shielding Gas				
Shielded Metal Arc Welding				
Short Arc M.I.G. Welding				
Slag				
Slag Inclusions				
Soapstone				
Spark Lighter				
Spark Testing				
Spatter				
Spray Arc M.I.G. Welding				
Stickout				
Stress Relieving				
Stringer Bead				
Tack Weld				
Tee Joint				
Tempering				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
T.I.G.				
Tensile Strength				
Thermal Conductivity				
Thermal Expansion				
Tip				
Toe of the Weld				
Torch				
Transformer				
Tungstun				
Undercutting				
Ultraviolet Rays				
Voltage				
Weave				
Welding Rod				
Whiskers				
Wire Electrode				
Wire Wheel				
Welding				
Welding Current				
Welding Voltage				
Yield Strength				
Yield Point				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Graphic Arts

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

	Not Acquired	Acquired Employment Level
1. _____		
2. _____		
3. _____		
4. _____		
5. _____		
6. _____		
7. _____		
8. _____		
9. _____		
10. _____		
11. _____		

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

Vocational
Curriculum Assessment Inventory

Shop: Graphic Arts

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

	Graphic Arts Skills	Objective	Exposure	Training	Production	Employable
Typesetting	Start & prime electronic typesetter					
	Install a font of type					
	Insert a width card					
	Load photographic material					
	Install & remove the cassette					
	Choose the correct pulley & belt					

		Objective	Exposure	Training	Production	Employable
Typesetting (cont'd)	Install pulleys & belts					
	Set leading & continuous leading					
	Set justification thumb dial					
	Select correct justification size					
	Read line length display - (subtract)					
	Use cancel character, word & line keys					
	Use insert space key					
	Use quad left & return keys					
	Correct an overset condition					
	Center a line of copy					
	Quad left & quad right copy					
	Use the keyboard layout (all keys)					
	Use the discretionary hyphen					
	Calculate a line of type					
	Double the point size of type					
	Use the compuwik					
	Clean the compuwik					
	Lubricate the compuwik					
	Clean film fonts					
	- - -

Layout (cont'd)	Objective	Exposure	Training	Production	Employable
Properly glue-up a layout (a piece of copy-one paste-up)					
Use a T-square in making a layout					
Properly use a T-square & a triangle in making an accurate layout					
Center copy on layout (center on center)					
Correctly paste-up type close to a picture					
Make a halftone window on a layout					
Reduce & enlarge using the diagonal line method					
Correctly figure enlargements & reductions using the wheel					
Mark a layout for ruling					
Design a name card					
Design a letterhead correctly					
Choose a type style for making layout of a name card					
Correctly & accurately proof a layout					
Properly cover a layout for out-proofing					
Correct errors on a layout after proofing					
Layout correctly a ruled & typeset form					
Layout a post card correctly					
Use india ink & whiting on a layout					
Layout an envelope (return address & center address)					

		Objective	Exposure	Training	Production	Employable
Camera	Mix dark room chemicals (developer A&B, Stop & Hypo)					
	Set camera for same size & lock in position & view copy on ground glass					
	Mix developer for darkroom (both powder & liquid)					
	Position copy in copy board of process camera					
	Center copy on ground glass of offset camera					
	Set copy board & lens board of process camera for reductions & enlargements					
	Remove film from box & place on back of process camera					
	Set the "F" number for proper exposures					
	Position lamps correctly for even light distribution on copy					
	Properly use gray scale when exposing & developing film					
	Determine emulsion side of film & explain layers of film					
	Determine what size film to use and what are the standard sizes of film					
	Place film on the camera back of an offset process camera					
	Expose a negative on the process camera					
	Insert film in developer tray & properly agitate it					
	Speed up development in a certain area of negatives while developing the whole negative					

		Objective	Exposure	Training	Production	Employable
Camera (cont'd)	Put negative in stop bath & fixer (hypo) bath & determine processing time					
	Inspect finished negative on darkroom glass					
	Correctly mix farmers reducer & apply to negatives or positives					
	Set automatic timer for exposures on process camera					
	Clean Developer, Stop & Fixer trays					
	Operate vacuum frame					
	Make photo print from negative					
	Make reverse negative					
	Clear sheet of film & make solid black negative					
	- - -

		Objective	Exposure	Training	Production	Employable
Stripping-Masking-Platemaking (cont'd)	Work-up an aluminum negative working offset plate					
	Work-up an aluminum negative SUBTRACTIVE aluminum offset plate					
	Hone (erase an image) the image from a plate					
	Make a brown lined proof					
	Mask a job for the KOR press					
	Check a negative before burning					
	Make a double burn negative setup					
	Make a step burn negative setup					
	Place a screen tint on the back of a negative					
	Dry a photographic negative					
	Scratch out filled in letters on a photographic negative					
	Score & crack a negative or a positive					
	Tape two negatives together (stripped)					
	Inspect an offset plate after it is worked up					
	Hang up & store a plate					
	- - -

Offset Press (cont'd)

	Objective	Exposure	Training	Production	Employable
Set vacuum feed to properly pick up sheets & place them in the correct position on the register board					
Properly set register board in Multilith press					
Adjust impression cylinder on 1250 and 1850 Multilith presses					
Set delivery end of 1250 press					
Load paper magazine					
How water system, inking system & impression unit combine to make duplication process					
Check quality of copy produced on Multilith machine					
Change vertical position of image on Multilith press					
Make lateral adjustments of master on Multilith 1250					
Put new form ductor covers on repelex unit of Multilith 1250					
Install new blanket on 1250 Multilith press					
Remove ink rollers from 1250 Multilith press					
Check contact pressure of ink form rollers					
Clean ink rollers with multilith cleaner sheet					
Clean ink fountain & fountain rollers					
Install repelex rollers					
Take care of blanket for offset press					
Check and adjust master-to-blanket pressure					

Offset Press (cont'd)

	Objective	Exposure	Training	Production	Employable
Adjust impression cylinder pressure					
Adjust feed rollers					
Oil & clean vacuum pump					

Vocational
Curriculum Assessment Inventory

Shop: Graphic Arts

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Graphic Arts Safety Skills	Objective	Exposure	Training	Production	Employable
Eye protection - when mixing any darkroom chemicals					
- when mixing chemicals for computer typesetters					
- when cleaning the press with solvents					

	Objective	Exposure	Training	Production	Employable
- when cleaning out silk screen frames					
- when mixing press chemicals					
- when mixing offset plate chemicals					
Hand protection if allergic to any chemicals or solvents					
No jewelry or loose clothing. Shop coats protect clothing					
Long hair must be safeguarded					
Only one person will operate machinery					
Use properly maintained tools					
Read all labels on chemicals before mixing or handling					
Use goggles when mixing any chemicals					
All chemicals must be returned to the safety cabinet					
No press adjustments should be made when machine is running					
Never remove or lock-out safety guards or covers					
Do not operate any power equipment unless authorized					
Do not operate equipment unless all guards & shields are in place					
Do not start-up a machine that has stopped for no apparent reason					
Lock-out and tag any equipment that is being maintained or repaired					
Check for persons, tools or pieces of equipment between and around all parts of equipment - before operating or starting					

	Objective	Exposure	Training	Production	Employable
In high noise areas, wear hearing protection					
Keep fingers & other parts of body clear of nips, slitters & moving parts when operating a press					
Do not reach into machinery to make adjustments or clear paper while press is running					
Do not wipe cylinders, plates, rollers or blankets while equipment is moving					
When using rags to clean a press, fold rag into a pad, with no loose ends					
Do not eat in the graphic arts area					

Special Education
Curriculum Assessment Inventory

Shop: Graphic Arts

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Graphic Arts Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Printers Measure				
Changes inches to picas				
Change inches to points				
Change picas to points				
Change picas to inches				
Change points to picas				
Change points to inches				
Measurement of an em				
Measurement of an en				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Linear Measurement	Properly read 12-inch ruler to nearest sixteenth				
	Properly read 12-inch ruler to nearest half pica				
	Properly measure to specified objects in a layout				
	Properly read a meter stick				
Basic Measuring Tools	Properly use a T-square				
	Properly use a triangle				
	Properly lay out equal spaces using a T-square & triangle				
	Properly use an enlarging & reducing wheel				
Calculations	Solve problems involving addition of whole numbers & fractions				
	Solve problems involving subtraction of whole numbers & fractions				
	Solve problems involving multiplication of whole numbers & fractions				
	Solve problems involving division of whole numbers & fractions				
	Properly calculate paper before cutting				
	Calculate type sizes				
	Calculate borders for a layout				
	Calculate margins for a printed job				
	Calculate exposure time & temperature				
	Calculate pH using test strips				
	Properly read a fahrenheit thermometer				

		Ed Objective	Frustration Level	Instructional Level	Independent Level
Volume/Area	Calculate & measure 1 ounce				
	Calculate & measure 1 pint				
	Calculate & measure 1 quart				
	Calculate & measure 1 gallon				
	Properly mix chemicals				

Special Education
Curriculum Assessment Inventory

Shop: Graphic Arts

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a job task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

I indicates that the student can perform the skill independently at an employment level

Graphic Arts Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Anti-halation backing				
Aperture				
Ascender				
Backing up				
Base				
Basis weight				
Blanket				
Bleed				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Blowup				
Body				
Body type				
Burn				
Chase				
Color separation				
Composing stick				
Computerized composition				
Condensed type				
Contact print				
Contact screen				
Continuous tone				
Copy				
Crop				
Curl				
Cyan				
Dampeners				
Densitometer				
Density				
Diffusion transfer				
Dummy				
Em				
En				
Felt side				
Flat				
Fog				
Form				
Grippers				
Gumming				
Highlight				
Italic				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Jog				
Layout				
M				
Mask				
Mechanical				
Moire				
Mylar				
Negative				
Offset				
Opaque				
Opaque ink				
Packing				
pH				
Pica				
Point				
Process colors				
Quad				
Register marks				
Relative humidity (RH)				
Saddle wire				
Screen				
Side wire				
Signature				
Slug				
Soft dot				
Stripping				
Tack				
Text				
Tints				
Transparent ink				

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Two-sheet detector				
Type gauge				
Vacuum frame				
Vehicle				
Vellum finish				
Walk off				
Wach up				
Wipe-on plate				
Work and tumble				
Work and turn				
Wrinkles				
Yellow				
Graphic Arts				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature

Vocational/Special Education

I.T.

Planner

Vocational Area: Machine

Individual Transitional
Preparation Form

Name of Student _____

Date _____

Career Goal _____

_____

Job Selection _____

Entrance Mathematics level needed _____ grade level
Entrance Reading level needed _____ grade level
Entrance Vocational Skills needed for job (list skill and ✓ appropriate column)

		Not Acquired	Acquired Employment Level
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

Present Aptitude Levels

Mathematics _____ grade level

Test/Date _____

Reading _____ grade level

Test/Date _____

Physical Assessment (✓ both)

P = level of present performance
E = level needed for employment

		Low	Average	High
Hand Movement	P			
	E			
Gait	P			
	E			
Eye-Hand	P			
	E			
Finger Dexterity	P			
	E			

Statement of physical condition (Tests/Dates) ____

_____

_____

_____

Needed agency assistance _____

_____

_____

Attitude Assessment (✓ one)

P = present level of development
E = level needed for employment

		Low	Medium	High
Follows directions	P			
	E			
Solves problems	P			
	E			
Works with people	P			
	E			
Completes job task	P			
	E			
Verbal communication	P			
	E			

277

278

244

Vocational
Curriculum Assessment Inventory

Shop: Machine

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

X indicates that student is working on this objective

Vocational Skills	Machine Skills	Objective	Exposure	Training	Production	Employable
	Sign a safety pledge					
	Complete general shop safety awareness checklist					
	Interpret & read industrial blueprints					
	Make a usable shop sketch					
	Make a layout using blueprint & hand tools					

Vocational Skills (cont'd)

	Objective	Exposure	Training	Production	Employable
Fasten work piece in bench vice					
Hacksaw to layout lines					
Finish by filing to layout lines					
File square hole to fit gage					
Find center of round stock using surface gage					
Find center of round stock using blade & center head (combination square set)					
Select proper tap drill size					
Produce drilled hole					
Counter sink hole					
Tap hole (producing internal thread)					
Produce external thread by using a die					
Convert fraction to decimal					
Complete simulated micrometer reading sheet					
Complete simulated vernier reading sheet					
Demonstrate linear measurement					
Cut off stock in power hacksaw (round & flat)					
Mount round stock in three jaw chuck (lathe)					
Mount round & square stock in four jaw chuck (lathe)					
Make proper gear selection for speed & feed					
Check head & tail stock alignment after light cut by marking both ends (lathe)					
Make tail stock alignment if required (lathe)					

Vocational Skills (cont'd)

	Objective	Exposure	Training	Production	Employable
Lathe, turn outside die to +-.010.					
Knurl on the lathe					
Lathe, chase threads, external					
Pedestal grinder, dress wheel by hand with disc dresser					
Sharpen tool bit to existing preground form					
Check number of threads with screw pitch gage					
Milling machine, vertical align vice by using a dial indicator					
Select end mill					
Mount end mill to proper holder					
Adapt to machine					
Make proper machine speed selection					
Cut key way vertical					
Cut key way horizontal					
Mount work piece parallel & mill to layout line with side of end mill					
Mount work piece in vice vertical and mill with face (bottom) of end mill					
On surface grinder, mount diamond set dresser, true & sharpen grinding wheel					
Surface grind two surfaces parallel					
Maintain tool crib					
Select proper tool upon demand					
Clean & store tools in tool crib					
Demonstrate good safe working conditions at all times					

Measuring Tools	Objective	Exposure	Training	Production	Employable
Identify machine shop measuring tools					
Read a rule to nearest one sixty-four .015					
Read micrometers to nearest .001					
Read verniers to nearest .001					
Measure objects					
Calculate basic math problems dealing with circumference					
Lay out, measure & set up angles using a protractor					

Vocational
Curriculum Assessment Inventory

Shop: Machine

Student Name: _____

Objective: Specific knowledge to be learned in order to perform occupational skills.

Exposure: Step by step demonstration has been presented by teacher or tutor through a sequential and developmental process.

Training: Performs entire task with direct assistance. Prompting is needed.

Production: The learner has been able to complete this task independently; however, he still lacks the speed and level of accuracy to be considered employable.

Employable: The learner is able to complete the task at a "normal rate" without error and independently for at least five consecutive trials.

✓ indicates that student has achieved this goal

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	Machine Safety Skills	Objective	Exposure	Training	Production	Employable
Personal Safety	Always wear safety glasses					
	Wear leather top, non-skid sole shoes					
	Wear ear protection in high noise level areas					
	Do not wear loose fitting clothing					

		Objective	Exposure	Training	Production	Employable
Personal Safety (cont'd)	Remove rings & jewelry when working in shop area					
	Conduct one's self in a manner conducive to safe shop practices					
Shop Safety Rules	Do not operate any machine tool until you have received safety instructions from the instructor					
	Make machine adjustments & measurements when machine is at complete stop					
	Keep all guards & safety devices in place					
	Report any defective machinery					
	Report all accidents to the instructor immediately					
	Disconnect power from machine tools before performing any maintenance tasks					
	Use the correct & proper tools to do a specific job					
Methods for an Orderly Shop	Keep shop floor clear & free from grease & oil					
	Materials & supplies must be stored in proper place					
	Store oily rags in a self-closing metal container					
	Keep sufficient brooms, brushes and other equipment available					

Special Education
Curriculum Assessment Inventory

Shop: Machine

Subject Area: Mathematics

Student Name: _____

Ed Objective: Specific knowledge to be learned in order to perform occupational skills.

Frustration Level: Inability to acquire specific knowledge pertinent to occupation area introduced.

Instructional Level: Ability to perform objective under the guidance of the instructor (training level).

Independent Level: Can transfer knowledge to related situations with independence and proficiency (production level).

✓ indicates that student has achieved this goal

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Machine Mathematics Skills	Ed Objective	Frustration Level	Instructional Level	Independent Level
Match symbols used in math problems to their name				
Solve math problems involving addition				
Solve math problems involving subtraction				
Solve math problems involving division				
Solve math problems involving multiplication				
Identify numerator & denominator in a given fraction				

	Ed Objective	Frustration Level	Instructional Level	Independent Level
Distinguish between proper, improper and mixed fractions				
Reduce fraction to lowest terms				
Solve problems involving addition of decimals, subtraction of decimals, multiplication of decimals & division of decimals				
Write fractions as decimals				
Add, subtract degrees, minutes & seconds				
Advanced student will calculate tapers & angles using & understanding trig tables				

Special Education
Curriculum Assessment Inventory

Shop: Machine

Subject Area: Vocabulary

Student Name: _____

Word Recognition: Ability to correctly recognize words from contextual, pictorial, structural or phonic clues.

Word Spelling: Ability to correctly spell a word.

Word Understanding: Ability to comprehend the meaning of a word.

Content Use of Word: Ability to use a word correctly in both verbal and written communication associated with a joo task.

F indicates an inability to learn the skill

S indicates that the student can perform the skill under supervision

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Blueprint

Machine Vocabulary Skills	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Section line				
Object line				
Dimension line				
Cut plain line				
Radius				
End view				
Top view				
Side view				

Lathe

	Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Follower rest				
Steady rest				
Lathe chuck				
Lathe dog				
Drive plate				
Face plate				
Head stock				
Tail stock				
Thread chase dial				
Lead screw				
Saddle				
Compount				
Cross side				
Bed (lathe)				
Apron				
Half nut				
Cross slide				
Lathe centers				
Tool post				
Tool holder				
Spindle threader				
Cam-lock spindle				
Tappered key drive spindle				
Clearance angles				
Gear box				
Tool bit				
Taper turning				
Facing				
Turning				
Boreing				

		Word Recognition	Word Spelling	Word Understanding	Content Use of Word
Lathe (cont'd)	Reaming				
	Center drill				
	Knurling				
	- - -

		Word Recognition	Word Spelling	Word Understanding	Content Use of Word
General	Peening				
	Filing or file				
	Draw filing				
	Cross filing				
	"V" block				
	Angle plate				
	Hand tap				
	Hand die				
	Die stock				
	"T" handle				
	Set up				
	Dividers				
	Protractor				
	Combination set				
	Depth gage				
	Screw pitch gage				
	Calipers				
	Micrometer				
	Vernier calipers				
	Radius gage				
	Center gage (fish tail)				
	Scriber				
	Surface plate				
	Surface gage				
	Dial indicator				
	Feed (rate)				
	RPM (speed)				

Vocational/Special Education
Curriculum Planning Form

Student's Name _____

Recommended Occupational Area _____

Agreement of Shop Instructor _____ Yes _____ No

Agreement of Special Education Instructor _____ Yes _____ No

Immediate Vocational and Safety Tasks to be Accomplished:
Vocational Instructor

Immediate Mathematics and Vocabulary Tasks to be Accomplished:
Special Education Instructor

Needed Materials (Vocational/Special Education Instructors):

Special Facilities (Vocational/Special Education Instructors):

Needed Aids (Vocational/Special Education Instructors):

Time Needed to Complete Tasks (Vocational/Special Education Instructors):

Vocational Instructor _____
Signature

Special Education Instructor _____
Signature